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ABSTRACT

A survey of 61 vocational rehabilitation (VR) agencies investigated the use of rehabilitation technology services. The results are organized into the following eight reports: (1) general report of findings (includes information on the governing structure of VR agencies); (2) personnel of VR agencies (includes findings on the roles and responsibilities of rehabilitation counselors, vocational evaluators, rehabilitation technology service providers, and technology resource specialists); (3) rehabilitation engineers (includes findings on the types of services rehabilitation engineers provide and their caseloads); (4) policies and procedures (includes findings on consumer involvement/interactions, policies on procurement and utilization of assistive technology, quality assurance, and vocational evaluation); (5) rehabilitation technology service delivery (addresses the organization of service delivery programs, provision of technology services, and external linkages with other agencies); (6) rehabilitation technology in the assessment/vocational evaluation process (discusses vocational evaluations in VR agencies, consideration of rehabilitation technology during referral, barriers to the use of rehabilitation technology, and accommodations in the assessment process); (7) assistive technology aids and devices (includes findings on funding and procurement, consumer issues, and reuse/disposal of assistive technology aids and devices); and (8) computer use for internal information sharing. Each report presents data in text, tables, and figures. (CR)

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Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey: General Report Findings.
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Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

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September, 1994

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The Center for Rehabilitation Technology Services (CRTS) was awarded a Rehabilitation Engineering Research Center (RERC) grant in October, 1992. This research-oriented RERC, funded by the National Institute on Disability and Rehabilitation Research (NIDRR), focuses exclusively on Rehabilitation Technology Applications in Vocational Rehabilitation (VR) Agencies.

As a part of this grant, CRTS is conducting eight studies. Study topics focus on various aspects of rehabilitation technology services in VR agencies and include:

- a general profile of rehabilitation technology services;
- client assessment/vocational evaluation practices;
- job responsibilities of rehabilitation engineers;
- linkages between VR and other agencies in providing technology services;
- job success and tenure for employees using assistive technology aids and devices in the work place;
- the efficacy of current approaches to the delivery of rehabilitation technology services;
- a model strategy to integrate technology in the rehabilitation process; and
- the consumers' role in the delivery of rehabilitation technology services in the VR process.

The Comprehensive Survey

Rehabilitation technology is a relatively new service area in VR agencies. Since information about rehabilitation technology services is not collected through the federal data collection process, specific information about how VR agencies across the nation deliver rehabilitation technology services was not available. A priority of this RERC was to collect information about current practices in VR agencies concerning rehabilitation technology. A comprehensive survey about rehabilitation technology in VR agencies was, therefore, conducted. Ordinarily this type of information would be collected through on-site interviews and observations. However, time and money did not permit the data to be collected in this fashion. Instead, a three-part survey was developed (with the involvement of VR employees from several agencies). Each part focused on a different aspect of the VR agency and services including: agency overview, assessment/vocational evaluation of clients, and the provision of rehabilitation technology services. The agency overview section focused on the functioning of the overall agency. It was designed to gather basic information about the organizational structure, the role of rehabilitation counselors in the provision of

technology services, the quality assurance system, computer usage in the agency, and current practices in providing consumers/clients rehabilitation technology services information. The assessment/vocational evaluation section focuses on vocational evaluations and the role of rehabilitation technology in these evaluations. The third section, rehabilitation technology services, focuses on the provision of rehabilitation technology services including: referral, assessment, reports, service delivery models, linkages with other agencies, procurement procedures, staffing patterns, and staff training.

Several strategies were employed to encourage completion of the survey. One of the most important strategies was to obtain approval of the survey from the Council of State Administrators of Vocational Rehabilitation (CSAVR). CSAVR offers this approval process to help VR agencies identify which of the enormous number of surveys they receive each year should be completed. Follow-up phone calls were made to agencies to ensure that they received the survey and to provide a contact name in case agency staff had any questions about the survey. If the survey was not returned within two months, additional contact was made by phone and through E-mail.

Target Population

Surveys were sent to all 81 VR agencies. In addition to the fifty states, VR agencies are located in Washington, DC and the United States territories (American Samoa, Guam, Northern Mariana Islands, Palau, Puerto Rico, and the Virgin Islands). In reports about VR services generated by the federal government and others, three types of VR agencies are frequently identified: "General," "Blind," and "Combined". Twenty-four states/territories have two agencies ("General" and "Blind") and 33 states/DC/territories have just one agency ("Combined") for a total of 81 agencies. A description of these three types of VR agencies follows.

- **"General" Agencies** serve people with all types of disabilities except persons who's primary disability is blindness or visual impairments.
- **"Blind" Agencies** serve people who's primary disability is blindness or visual impairments.
- **"Combined" Agencies** serve people with all types of disabilities including blindness or visual impairments.

Response

As of June 1, 1994, 61 agencies (75%) returned all or part of the survey. This includes 20 "General" agencies, 18 "Blind" agencies, and 23 "Combined" agencies. Survey response was evenly distributed across the states. In follow-up calls to the agencies, CRTS staff found that, in most cases, survey sections were being completed by various staff members with expertise in that area.

Statistics reported here are based on the 61 agencies who returned their surveys. When reviewing the analysis of each question, be advised that the total number of responses for each question varies since every question on each returned survey was not answered. Responses are based on information from the 1991-1992 fiscal year unless otherwise indicated. In some cases, responding agencies were called to clarify a response to one or more questions. In most instances, however, the agency's responses were accepted as provided.

Report Design

Due to the length of the survey and the variety of topics covered, results will be described through a series of topical reports. Each report will follow a similar format. Data will be presented in discussion, tables, and figures. The original survey question will be included on each table and figure. The following is a list of topical reports which have been developed. These reports can be ordered as a package or individually.

- Personnel
- Rehabilitation Engineers
- Policies and Procedures
- Rehabilitation Technology Service Delivery
- Rehabilitation Technology in the Assessment/Vocational Evaluation Process
- Assistive Technology Aids and Devices
- Computer Usage

Organization/Governing Structure of VR Agencies

All of the research studies which are a part of this grant are to be conducted in VR agencies or the information must be collected from these agencies. The studies must, therefore, fit with current policies and procedures of the various agencies. Although all VR agencies follow the same regulations, the structure of the agencies and how they implement the regulations varies from one agency to another. The structure of the state government within which the agency is situated greatly impacts the way the agencies are organized and how they develop and implement policies and procedures of the agency. In order to develop the studies, work with the agencies, and conduct the studies, CRTS staff needed some information about how the agencies are organized and where they are situated within state government. As a result, one entire section of the survey focused on this topic. Background information about the organizational structure in which the agencies are situated, the organization of the VR agency itself,

and some of the programs which it operates are reported in this section. Information about staffing patterns and other administrative issues are covered in other sections of this report.

Governing Structure

There are two locations in the state government hierarchy in which VR agencies are typically situated: in a separate state agency or within an umbrella agency. Sixty-eight percent of agencies responding to this survey are located within an umbrella agency while only 25% are a separate agency. This is a result of a trend in state government toward reducing the number of agencies and placing agencies with a similar mission together under a larger agency. Table 1 provides additional information about how these agencies are structured.

TABLE 1

Describe where your VR agency is situated within your state system.

Separate State Agency	***25%***	***(15)***
Those with a Board of Directors	13%	(8)
Those who report directly to a Cabinet Secretary or Governor	12%	(7)
Division of Umbrella Agency	***68%***	***(42)***
Those with a Board of Directors	23%	(14)
Those who report directly to a Cabinet Secretary or Governor	46%	(28)
Other	***7%***	***(4)***

Table 2 shows the divisions or units housed with VR in umbrella agencies. It is interesting to note that VR agencies are housed with human service-related agencies more often than with labor-related agencies.

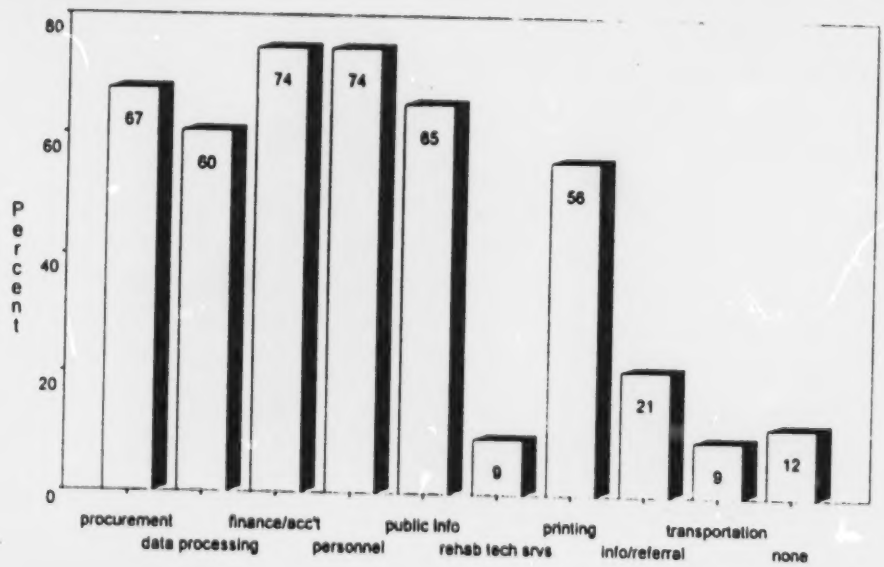
TABLE 2

What other divisions or units are part of your umbrella agency?

Division/Unit	*Frequency*	
Social Services	51%	(23)
Mental Retardation	38%	(17)
Mental Health	33%	(15)
Family Assistance	33%	(14)
Aging	28%	(12)
Education	22%	(10)
Vocational Education	20%	(9)
Health Services	20%	(9)
Employment Security	18%	(8)
Higher Education	13%	(6)
Disability Services	13%	(5)

Umbrella agencies are typically established to save money on administrative services and coordinate services provided by the divisions. As seen in Figure 1, VR programs housed within umbrella agencies reported sharing primarily administrative services and very few client-related services.

Figure 1 Indicate which, if any, services are shared by units or divisions of the umbrella agency.



"Tech Act" Projects

The Technology-Related Assistance for Individuals with Disabilities Act of 1988 (PL 100-407) authorized the funding of state-wide grants to promote systems change related to assistive technology. To date, 49 states have been awarded these "Tech Act" grants. Fifty-three percent of the agencies responding to this question on the survey reported that VR is the lead agency for this grant project.

Independent Living Services

The federal government has several categories of funding for independent living services. Part B funds are for state agency services. A state-wide independent living council must be established and supported by these funds. Part C funds are for independent living centers. These centers must be operated by nonprofit agencies. Agencies were asked to report the number of centers for independent living located in their state. Answers ranged from 1 to 35 with 86% of the agencies reporting 10 or less. Agencies also reported that 40% of the independent living clients received some type of rehabilitation technology service.

Organizational Structure

In order to gain information about how each VR agency is organized, an open-ended question was included on the survey asking agencies to describe their organizational structure including administration, counseling services, vocational evaluation, and rehabilitation technology services. Just as deciding how to ask this question proved difficult, summarizing the answers proved next to impossible. Each agency had an organizational structure which involved systematically dividing the state into some smaller parts in order to provide direct services to clients. Difficulty arises in characterizing these smaller parts due to inconsistencies in providing information and confusion about terms. For example, some agencies reported having what they termed regional offices with satellite offices within each region. Other agencies used the term main offices and field offices. It was difficult to determine if a main office and a regional office were equivalent given the information provided. Some agencies used other terms which were equally hard to define. Rather than make assumptions which may not be correct, it was decided to use results of this question for internal purposes in planning future studies. This information will thus not be reported in aggregate.

Summary

Survey results revealed that VR agencies vary considerably in the way they are organized. Since there is such variation, it would be difficult, using this data alone, to draw any conclusion about the impact of agency organization on rehabilitation technology services. At least one study to be conducted in Year 3 of the grant will examine the delivery of rehabilitation technology services. Information obtained about the organization of the agency will be used in this study.

CRTS is a Rehabilitation Engineering Research Project. Funding for this report has been provided by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education grant #H133E20002-94. Opinions expressed in this report are those of CRTS and should not be construed to represent opinions or policies of NIDRR.

As required by Proviso 129.55 the Center for Rehabilitation Technology Services reports that it printed 300 copies of this report for a cost of $72.00 at $.24 per copy.

Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

Personnel

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
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Personnel

Vocational Rehabilitation (VR) agencies employ a variety of people in order to conduct the business of the agency. Many of these agencies also utilize outside service providers to provide a variety of services. Outside service providers are persons who work for themselves or other agencies or organizations and are paid by VR through a contract or other means to provide some service to the agency and/or their clients.

Across the country, a variety of agency staff and/or outside service providers are involved in the provision of rehabilitation technology services to VR clients. Several questions were included on the survey to clarify the roles of rehabilitation counselors, vocational evaluators, and rehabilitation technology service providers in the provision of these services. Rehabilitation technology training opportunities for VR staff are briefly addressed.

Rehabilitation Counselors

Rehabilitation counselors play a key role in the provision of services to VR clients. In order to better understand their role in the provision of rehabilitation technology services, a series of questions on this topic were included in the survey. Fifty-nine agencies responded to the question concerning the number of rehabilitation counselors employed by the agency. The response ranged from a low of 4 to a high of 850. Only one agency reported having more than 450 counselors. The median number of counselors is 76 (this means 50% of the agencies have more than 76 counselors and 50% have less than 76). All of the agencies reporting less than 25 counselors were "Blind" agencies. Of the 18 "Blind" agencies reporting, only two had more than 50 rehabilitation counselors. As can be seen from these figures, "Blind" agencies tend to be far smaller than "General" or "Combined" agencies.

Types of Caseloads

Each counselor in a VR agency is assigned a caseload of clients. Four types of caseloads are typically assigned: general, specialty, a combination of two or more specialties, and a combination of general and specialty caseloads. Table 1 shows the types of caseloads typically assigned in VR agencies. The first column describes all agencies. Figures in this column show that specialty caseloads are assigned in most of the agencies while combinations of two or more specialty caseloads are seldom assigned. Not surprisingly, "Blind" agencies assign specialty caseloads almost exclusively. The second and fourth columns describe "General" and "Combined" agencies respectively. These figures show that general caseloads are assigned in almost all of the agencies while combinations of two or more specialty caseloads are less frequently assigned.

TABLE 1

Please indicate the type of caseloads which are typically assigned to rehabilitation counselors in your agency.

Type of Caseload	*Overall*	*General*	*Blind*	*Combined*
General Caseloads	68% (41)	90% (18)	6% (1)	96% (22)
Specialty Caseloads	88% (53)	80% (16)	100% (17)	87% (20)
Combination of 2 or More Specialty Caseloads	22% (13)	30% (6)	0	30% (7)
Combination of General and Specialty Caseloads	47% (28)	60% (12)	0	70% (16)

Specialty Caseloads

Specialty caseloads are usually selected based on type of disability (e.g., mental retardation, traumatic brain injury, etc.) but they can also be based on location (e.g., public school, rehabilitation facility, etc.) or special program (e.g., workers compensation, SSI, etc.). Table 2 shows the types of specialty caseloads typically found in VR agencies. Three types were found in over half of the agencies reporting: blind, hearing impaired/deaf, and mental illness. Other specialty caseloads found in more than one-fourth of the agencies include public school, substance abuse, mental retardation, and head injured.

Closure Goals

A counselor can close a client's case in status 26 when the client has been successfully employed for 60 days. Since the primary focus of VR is successful employment of clients, large numbers of closures are one indication of a productive agency. Since legislators often look favorably on productivity, the number of successful closures can be related to increased funding. Sixty agencies responded to the question on closure goals. Most of these agencies (87%) have established closure goals for their rehabilitation counselors. When broken down by type of agency, the percentage of agencies reportedly having closure goals remains high. Seventeen of the 19 "General" agencies who responded to this question said they have established closure goals. Sixteen of the 18 "Blind" agencies and nineteen of the 23 "Combined" agencies reported having closure goals.

TABLE 2

Check all of the speciality caseloads used in your agency

	TYPE OF AGENCY			
	OVERALL	*GENERAL*	*BLIND*	*COMBINED*
	(N = 61)	(N = 20)	(N = 18)	(N = 23)
Blind	69% (42)	10% (2)	100% (18)	96% (22)
Hearing Impaired	66% (40)	90% (18)	0	96% (22)
Cardiovascular	10% (6)	20% (4)	0	9% (2)
Severe Disabled	13% (8)	20% (4)	11% (2)	9% (2)
Trust Fund	10% (6)	20% (4)	0	9% (2)
Supported Employment	21% (13)	15% (3)	0	44% (10)
Mental Illness	53% (32)	75% (5)	0	74% (17)
Mental Retardation	28% (17)	45% (9)	0	35% (8)
Public Offender	18% (11)	25% (5)	0	26% (6)
EAP/EIP	8% (5)	20% (4)	0	4% (1)
Substance Abuse	28% (17)	45% (9)	0	35% (8)
Public School	36% (22)	50% (10)	11% (2)	44% (10)
Worker's Comp.	16% (10)	35% (7)	0	13% (3)
Head Injured	25% (15)	45% (9)	0	26% (6)
Physical Disability	12% (7)	25% (5)	0	9% (2)
Hospital Based	16% (10)	35% (7)	0	13% (3)
Rehab Facility Based	15% (9)	25% (5)	6% (1)	13% (3)

When asked how many closures the counselors must attain, the agencies typically responded with a range. Thirty agencies reported closure goals for their general caseload counselors. Responses ranged from 11 to 60. Nine agencies reported a range between 11 and 20, 15 reported a range between 21 and 30, and 6 of the agencies reported closure goals between 30 and 60. Only one agency had a general caseload closure goal of 50 to 60.

Thirty-five agencies reported the number of closures required of counselors with specialty caseloads. Once again, a range was typically reported. The responses ranged from 5 to 50 with only one agency reporting 50 required closures. About half of these reported requiring less than 20 closures.

Nine agencies reported the number of closures required of counselors witn two or more specialty caseloads. These closure goals ranged between 11 and 35. For those counselors with both a general caseload and at least one specialty caseload, 12 agencies responded reportedly requiring a range of 10 to 40 closures per year.

Vocational Evaluators

As with other services provided to Vocational Rehabilitation (VR) clients, the agencies varied with respect to who provided vocational evaluations. Three agencies (8%) reported using only employees and 17 (33%) reported using only outside service providers. Most used both employees and outside service providers to conduct vocational evaluations. The percentage of agencies using employees ranged from 5 to 100% for an average of 54% and the percentage using outside service providers ranged from 1 to 100% for an average of 64%.

When asked how many outside service providers conduct vocational evaluations in your agency, the responses ranged from 1 to 1000. Closer analysis indicated that 90% of the agencies used 70 or fewer outside service providers. The median response was 13 (50% indicated they had more than 13 vocational evaluators and 50% indicated they had less). Five agencies (11%) reported that a request for proposals is used to select outside service providers of vocational evaluation services.

Qualifications

Minimum qualifications for vocational evaluators have been established in 29 of the agencies who use their own employees and in 25 of those who use outside service providers. As can be seen in Figure 1, for VR employees, a bachelors degree is most frequently required followed by a bachelors degree in an assessment-related area. For outside service providers, a bachelors degree in an assessment-related area is most frequently required followed by a bachelors degree. A masters degree is seldom required.

Figure 1 Indicate the minimum educational preparation required.

Agency Sponsored Training for Vocational Evaluators

Two questions were asked regarding training for vocational evaluators. The first related to the amount of agency-sponsored vocational evaluation training provided for vocational evaluators. Seventy-two percent (34) of the agencies reported providing this type of training for their employees. Thirty-seven percent (20) of the agencies reported providing this type of training for their outside service providers.

There is some indication that VR agencies recognize the need for training in rehabilitation technology. VR agency-sponsored rehabilitation technology training of vocational evaluators occurs to a large extent with VR employees (69%), but to a lesser degree with outside service providers (37%). When asked to estimate how many hours of training in the last fiscal year (91-92) was devoted specifically to rehabilitation technology, agencies reported providing from 2 to 250 hours of training for employees and 2 to 100 hours of training for outside service providers. A closer look at the training reported for employees shows that two agencies reported 180 and 250 hours respectively. The other agencies reported providing 56 hours or less. The median number of hours of training per agency for employees was ten hours. A closer look at training reported for outside service providers showed that eight agencies reported providing this training. Only one agency reported providing 100 hours of training and the rest provided 24 hours or less. The median number of hours of training per agency for outside providers was 16. Table 3 shows the breakdown of how this training was provided to vocational evaluators. Agency inservices were predominantly used to provide this training. One of the eight agencies who reported providing training to outside service providers did not report the type of training provided.

TABLE 3

If the vocational evaluators received rehabilitation technology training, please indicate what types of training.

Type of Training	*Employees*	*Outside Service Providers*
	N=28	N=8
Agency Inservice	23 (82%)	4 (50%)
National Conference	10 (36%)	0
Regional Conference	12 (43%)	2 (25%)
College Course	6 (21%)	0
Other	5 (18%)	1 (13%)

Rehabilitation Technology Service Providers

Rehabilitation technology service provider refers to anyone (e.g., rehabilitation engineer, fabrication specialist, rehabilitation technologist, technology specialist, etc.) who provides rehabilitation technology services. Most agencies use a combination of VR employees and outside service providers to provide these services. As described earlier, outside service providers are persons who work for themselves or other agencies or organizations and are paid by Vocational Rehabilitation (VR) through a contract or other means to provide some service to the VR agency and/or VR clients.

Twenty-seven agencies reported using outside service providers for more than 50% of their rehabilitation technology service delivery needs. Twenty-two agencies reported using VR employees for more than 50% of their service delivery needs. As can be seen in Table 4, agencies utilized outside service providers more frequently than VR employees to provide these rehabilitation technology services. Seven agencies reported using no VR employees to provide these services. All responding agencies reported using at least one outside service provider.

TABLE 4

Approximately what percentage of rehabilitation technology services (apart from product sales) provided to VR clients are delivery by:

VR Employees - 46%	(Range = 0% to 100%)
Outside Service Providers - 62%	(Range = 1% to 100%)

Number of Rehabilitation Technology Service Providers

Table 5 shows actual numbers of outside service providers and employees as reported by agencies. When outside service providers are used, it appears that different providers are utilized for each location while an employee may cover several locations. As a result, more outside service providers than employees are used to provide rehabilitation technology services.

TABLE 5

Estimate the number of rehabilitation technology specialists who provided services to VR clients in the last fiscal year (91-92).

Service Provider	*# VR Employees*	*# Outside*
Rehabilitation Engineer	31	77
Assistive Technology Specialist	53	393
Occupational Therapist	27	1148
Physical Therapist	19	1254
Rehabilitation Technologists	20	93
Speech Pathologists	56	208
Fabrication Technician	51	65

The numbers of outside service providers in three categories - assistive technology specialist, occupational therapist, and physical therapist - are significantly higher than other categories. This is the result of outliers. Outliers occur when one or two agencies report significantly higher numbers than other agencies. Outliers do not mean that an agency is reporting inaccurately. It could be that this agency is larger or there is some other reason why they have significantly higher numbers. When grouped with other agencies, however, it distorts statistics such as means making them significantly higher or lower than they would otherwise appear. In the assistive technology specialist category, two outliers appeared.

One agency reported using 50 of these specialists and another reported using 200. The other 90% of reporting agencies used between one and fifteen assistive technology specialists for a total of 143 specialists. Similarly in the occupational therapist category, two outliers accounted for 960 of the reported number of therapists. When these are removed, 188 occupational therapists are utilized by the remaining 92% of agencies. In the physical therapist category, one agency reported using 1,015 therapists. Ninety percent of the agencies reported using the remaining 239 physical therapists.

Approved List of Outside Service Providers

Twenty-four agencies reported that they have a list of approved rehabilitation technology service providers who can be paid with agency funds to provide rehabilitation technology services to VR clients. The number of providers on lists kept by agencies ranged from one to several hundred with an average of 42. The agencies reporting large numbers of outside service providers in Table 5 all reported they have an approved list of outside service providers. These agencies may have reported the number of providers on the list. These providers may or may not have provided services during that fiscal year. Twenty of the agencies who maintain these lists (83%) require that the provider be on the list in order to be eligible to provide rehabilitation technology services to clients paid with agency funds.

Reimbursement of Outside Service Providers

Since many agencies rely on the services of outside service providers for at least some of their rehabilitation technology services, it is important to note the mechanism and amount of reimbursement. As can be seen in Table 6, the rates of reimbursement vary tremendously regardless of the mechanism used for reimbursement.

The most frequently used mechanisms for reimbursing rehabilitation technology outside service providers are hourly rate, standing/renegotiated contract, and set fee for service. Hourly rate is the most frequently used reimbursement mechanism (60%). Even when the five agencies reporting individually negotiated contracts under *other* are added together with standing/renegotiated contract, this reimbursement mechanism (38%) is well below the percentage using hourly rate.

TABLE 6

If your agency uses outside service providers to deliver rehabilitation engineering service, how and at what rate are they reimbursed for their services?

Type of Reimbursement	*Number/ Percentage*	*Range*
Set Fee Per Client	6 (10%)	[range = $50 to $300]
Set Fee Per Service	13 (22%)	[range = $35 to $425]
Hourly Rate	35 (60%)	[range = $20 to $75]
Standing or Renegotiable Contract	17 (29%)	[range = $50,000 to $880,000 per year]
Other Methods	7 (12%)	
Individually Negotiated Contracts		
Usual and Customary Fee		
Establishment Grant		

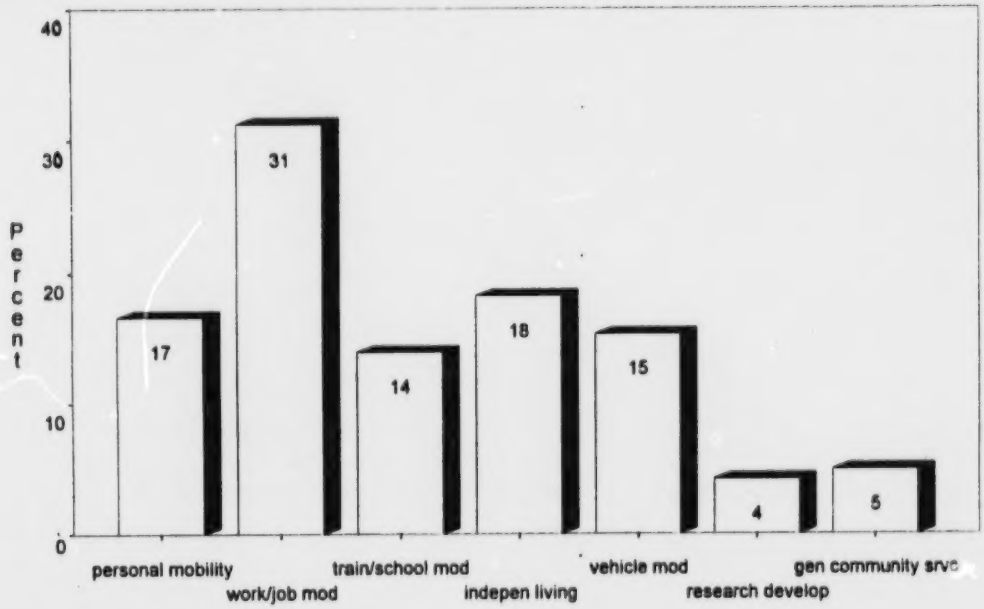
There is a great deal of interest in the field concerning reimbursement of outside service providers. Additional information may be collected in this area.

Areas in Which Rehabilitation Technology Service Time is Spent

There are a variety of ways to categorize the activities in which a rehabilitation technology service provider becomes involved. One method is to divide according to areas of client activity. However, since some providers spend a portion of their time in nonclient-related activities, other areas were also needed. Five client-related and two nonclient-related areas were listed. Rehabilitation technology providers were asked to indicate what percentage of their typical work time was spent in each area. Figure 2 shows the average percentage of time spent in each of these activity areas. Since Vocational Rehabilitation agencies are primarily focused on assisting clients with obtaining and maintaining employment, it is not surprising that the majority of the technology providers time is spent in the work/job modification area.

Figure 2

Considering all rehabilitation technology service activities provided in the last fiscal year (91-92), approximately what percentage of rehabilitation technology service time was spent in each of the following general areas?



In other questions, further information was requested about the nonclient-related activities in which rehabilitation technology service providers engage. Twenty-six agencies reported that technology service providers are required to train other staff about technology and related services. On average, these staff spent about 10% of their time in marketing and training activities.

Technology Resource Specialist

A variety of strategies are being used by agencies in an attempt to meet the mandate of providing rehabilitation technology services to all clients who need these services. One strategy is to identify a Technology Resource Specialist. As defined in the survey, this person could be a rehabilitation counselor, vocational evaluator, or other service delivery person who has some training, experience, and/or interest in rehabilitation technology services and devices. This person spends some part of his/her day encouraging the use of rehabilitation technology and typically has other nontechnology-related job responsibilities.

Twenty-three agencies reported that they have field staff such as rehabilitation counselors or vocational evaluators officially designated as technology resource specialists. These staff are typically responsible for a particular office or geographic area. Nine "general" agencies, nine "blind" agencies and five "combined" agencies have designated staff for this type position.

Most agencies do not compensate these staff with reduced caseloads or extra pay although one agency did report using modified caseloads and another said they "allowed time" for technology and work modifications. A few agencies reported having a staff person who served as a consultant to counselors and had no other responsibilities. These staff typically served the entire state and have a technology or management background rather than counseling. Several agencies reported that they are in the process of developing these positions.

Training Opportunities

Since rehabilitation technology services is a relatively new area for VR staff, many agencies offer training opportunities to help them utilize these services appropriately. Table 7 shows types of training opportunities offered to various staff in the VR agency.

TABLE 7

Indicate below the rehabilitation technology training opportunities offered to each of the following categories of staff by your agency in the last fiscal year (91-92).

Training Opportunity	*Rehab Counselor*	*Rehab Tech Administrator*	*Vocational Specialist*	*Evaluator*
New Employee Orientation	35 (58%)	16 (27%)	17 (28%)	18 (30%)
Conference/Workshop (registration paid by agency)	37 (62%)	30 (50%)	29 (48%)	14 (23%)
Agency In-Service	42 (70%)	28 (47%)	24 (40%)	21 (35%)
Vendor Demonstration	38 (63%)	27 (45%)	26 (43%)	19 (32%)
University Course (tuition paid by agency)	13 (22%)	6 (10%)	8 (13%)	2 (3%)

Over half of the agencies responding to this question reported that they provide training in rehabilitation technology services to their rehabilitation counselors. Agency sponsored in-services are used more often than other types of training followed closely by vendor demonstrations, conferences/workshops, and new employee orientations. University courses are the least popular form of training.

Summary

Survey results indicate that all service delivery staff in VR play a role in identifying the need for and/or providing rehabilitation technology services. In order to effectively meet the needs of VR clients, each staff person must be aware of agency policy in this area, understand their role, and have enough information to effectively perform their role. The challenge for VR agencies is to keep staff up-to-date in their knowledge of these services and VR's policies in this area to enable them to effectively play their roles.

CRTS is a Rehabilitation Engineering Research Project. Funding for this report has been provided by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education grant #H133E20002-94. Opinions expressed in this report are those of CRTS and should not be construed to represent opinions or policies of NIDRR.

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Rehabilitation Technology Services
in Vocational Rehabilitation
Agencies Survey

GENERAL REPORT OF FINDINGS

Rehabilitation Engineers

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
1410-C Boston Ave.
West Columbia, South Carolina 29170

Rehabilitation Engineers

One priority identified by our funding source is the need to examine the role and functioning of rehabilitation engineers in the provision of rehabilitation technology services to Vocational Rehabilitation (VR) clients. An entire section of the survey was thus devoted to rehabilitation engineers. This section of the final report provides a summary of these findings.

Questions concerning who qualifies as a rehabilitation engineer, what is the role of a rehabilitation engineer, what educational requirements exist for rehabilitation engineers, etc. are the subject of much discussion and debate. The answers to these questions appear to be dependent upon a number of factors, not all of which were addressed in the present survey. Furthermore, it must be remembered that the information below pertains to rehabilitation engineering services provided in VR agencies.

VR agencies were asked to have the Rehabilitation Engineer Profile section of the Comprehensive Survey completed by each person "providing rehabilitation engineering services in the VR agency." Profiles were returned by 121 individuals representing 61 different agencies. The answers reflect the individual variations in agencies and in the service providers themselves as to who is "considered" a rehabilitation engineer. For example, job titles are usually determined by each agency with an accompanying written description of the requirements for who may hold that title. A combination of education and experience usually determines if an individual meets the requirements for a given job title and description. Because this varies across agencies, the same services may be provided by individuals with different job titles. This is certainly the case for employees who provide rehabilitation engineering services.

Who Provides Rehabilitation Engineering Services?

There were over 60 different job titles held by the 121 individuals who completed the Rehabilitation Engineer Profile. Center for Rehabilitation Technology Services (CRTS) staff combined these titles into similar categories resulting in six broad groups of job titles. Most of the job titles fit into the Rehabilitation Engineer and Rehabilitation Technology Specialist categories. Together, these categories contained 65% of the sample. The six groups and reported frequencies are shown in Table 1.

TABLE 1

What is your formal job title?

*Job Title Categories**	*# Reported*	*Percentage*
Rehabilitation Engineer	39	33%
Rehabilitation Technology Specialist	38	32%
Administrator/Engineer (e.g., Chief Engineer, Director of Engineering, etc)	10	8%
Engineer - other than Rehabilitation Engineer (e.g., Auto Engineer, Farm Engineer, etc.)	7	6%
Other Non-Engineer, Admin. (e.g., Regional Director, Field Services Coordinator)	13	11%
Other Non Engineer, Non Admin (e.g., OT, Career Development Specialist, etc.)	13	11%

** Categories identified by CRTS staff based on formal job titles supplied by survey respondents.*

Of those 121 persons completing the profile, the majority, 65 (54%) are VR employees, with all but two of those 65 working in full-time positions. Forty-seven (39%) provide services through a contract or other arrangement with the agency. A few providers, 9 (7%) have unusual employment relationships such as working for a federal grant that provides services to VR.

Twenty-six outside service providers reported the number of hours per week they typically spend on the VR contract. They work an average of 19 hours per week for VR, with a range from one hour to 48 hours per week. It can be seen that outside providers spend, on the average, less than half the number of hours providing services than do VR employees. It is not clear from these data, however, how much of a typical 40 hour full-time week VR employees spend in direct service provision. Another survey question attempted to address this issue by having VR employees estimate how much of their time is spent in various classes or categories of activities. These data are presented in Table 2 broken down by job title category. It must be noted that estimates varied tremendously from individual to individual and this variation is not reflected in the averages presented below.

TABLE 2

During the last fiscal year (91-92), what percentage of your time was spent in the following areas?

Activity Area	Rehab Engineer	Rehab Tech Specialist	Admin/ Engineer	Other Engineer	Admin/ Other	Other	Total
Mgmt/ Admin	11%	10%	22%	18%	38%	19%	16%
Service Delivery	66%	59%	30%	45%	37%	53%	55%
Community Service	7%	13%	6%	17%	5%	11%	9%
Training	10%	9%	9%	11%	14%	6%	9%
Research	5%	6%	21%	5%	5%	7%	7%
Management Activities		*F(5,109) = 4.83 P<.0005*					
Service Delivery		*F(5,109) = 4.74 P<.0006*					

An analysis of variance was conducted on these data to see if there were any differences between the six job type groups based on percentage of time spent in activities. There were statistically significant differences between the groups for management activities and services delivery activities. Administrators/Other spent significantly more time in management/administrative activities (M = 38%) than Rehab Tech Specialists (M = 10%) and Rehabilitation Engineers (M = 11%).

In the area of service delivery, Rehabilitation Engineers spent significantly more time (M = 66%) than Administrators/Other (M = 37%). Also, Rehabilitation Engineers M = 66%) and Rehab Tech Specialists (M = 59%) spent significantly more time in service delivery than Administrators/Engineers (M = 30%). These differences would be expected since Administrators would typically spend more time managing and supervising than persons in direct service roles. There were no differences between the groups in the amount of time spent in community service, training, or research activities.

Regarding the question raised previously concerning the amount of direct service time spent by VR employees, over all job categories, VR employees estimated they spent about 55% of their time in service delivery activities.This would translate to approximately 21 hours on the average, comparable to the 19 hours reported by outside providers.

The second most frequent activity for all rehabilitation providers is management or administrative tasks. A related question revealed that 53 individuals or 44% of the sample supervises at least one other staff member. Most often this is other rehabilitation engineering staff, for example, technology interns or students, secretaries, and/or rehabilitation assistants. The amount of administrative duties most likely indicate a need for a good understanding of VR procedures. It appears that the majority of rehabilitation engineers in the VR system do in that 88 (74%) of all respondents reported that they had received training in the operation and function of their VR agency.

Base of Operation for Outside Service Providers

Outside service providers of rehabilitation engineering services to VR have as their base of operation a variety of organizations/structures. Over seven different types of organizations/structures are mentioned, but no one type dominates. As seen in Table 3, the most frequently reported base of operation is the private rehabilitation business. Other frequently mentioned, bases include university programs and hospital-based programs. Less frequently mentioned were community rehabilitation facilities and other state agency programs. These bases of operation were equally spread across private non-profit (36%), private for profit (34%), and public non-profit (30%) facilities.

TABLE 3

If you are an outside service provider, check the setting which best describes your base of operation.

Base of Operation	*Number*	*Percentage*
Private rehabilitation business	13	25%
University program	11	21%
Hospital based program	9	17%
Rehabilitation Technology Supplier	7	13%
Community rehabilitation facilities	4	8%
Other state agency programs	3	6%

Educational Background

Table 4 shows the highest degree earned by the various rehabilitation technology providers.

TABLE 4

Describe your educational background.

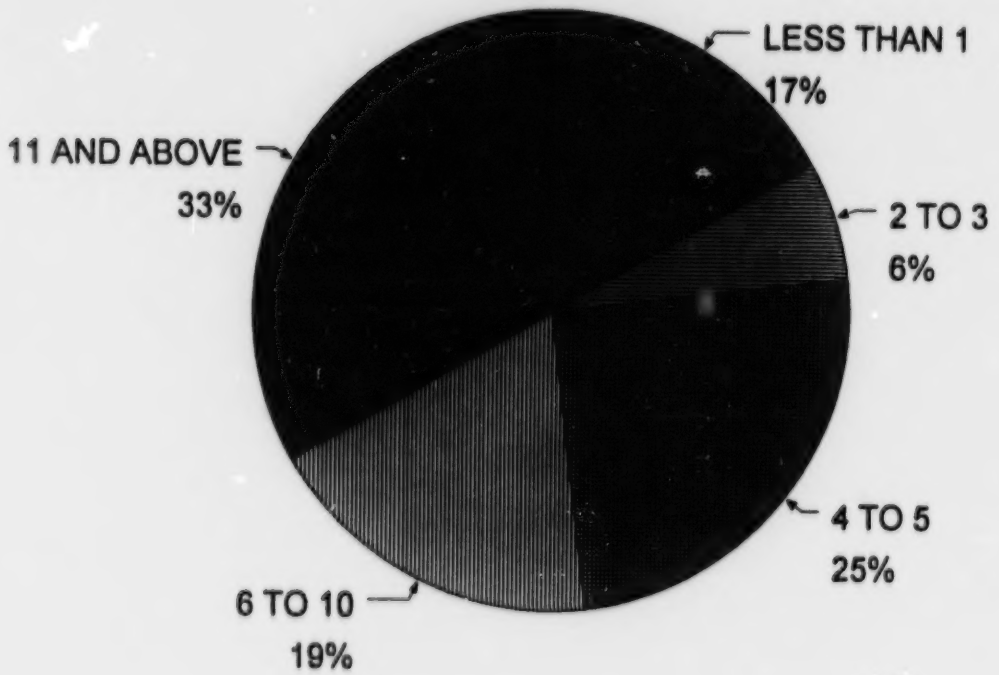
Educational Background	Rehab Engineer	Rehab Tech Specialist	Admin Engineer	Other Engineer	Admin/ Other	Other
High School	2	4	0	0	1	0
Associate Degree	0	4	0	0	0	1
Bachelors Degree	18	19	5	4	7	4
Masters Degree	16	11	3	2	4	7
Doctoral Degree	3	0	2	1	1	1

Thirty-nine rehabilitation engineers hold a cumulative total of 34 degrees in engineering. On the other hand the 37 rehabilitation technology specialists hold a total of seven degrees in engineering. For all providers, 10 are licensed as professional engineers.

Experience Working as a Rehabilitation Engineer

The average number of years of experience working as a rehabilitation engineer reported by the sample was 8.2 years with a range of 1 to 23 years. Figure 1 reveals that two-thirds of the sample have 10 or fewer years of experience.

Figure 1 **How many years of experience do you have working as a rehabilitation engineer?**



Also asked and reported was the number of years of experience working in an engineering field other than rehabilitation engineering. Only about half of the total sample had such experience. The average number of years reported was 11 years with a range of 1 to 49 years. Again, the majority of the sample who answered this question fell into the lower end of the scale, 50% had six or fewer years of experience.

Specific Services Provided

Respondents were asked to rate how often they provided various specific rehabilitation technology services in Fiscal Year 1991-92. Respondents were asked to use a five point scale in responding to several questions contained in the survey. This scale gave respondents a choice of indicating either 1 = Never; 2 = Seldom; 3 = Occasionally; 4 = Frequently; and 5 = Almost Always. The descriptive rating, mean rating, and range are reported in the table.

Table 5 depicts the various services and the average frequencies reported for each.

TABLE 5

Considering the individuals you served in the last fiscal year (91-92), how often did you provide the following specific types of rehabilitation technology services?

Types of Services	*Rating*	*Mean and Range*
Evaluation/Assessment	Frequently	M = 4.3 Range 1-5
Recommendations/Prescriptions	Frequently	M = 4.2 Range 1-5
Equipment Procurement	Occasionally	M = 2.8 Range 1-5
Fitting/Adjustment	Occasionally	M = 2.8 Range 1-5
Custom Design	Occasionally	M = 2.9 Range 1-5
Fabrication/Adaptation	Occasionally	M = 2.7 Range 1-5
Device Training of Consumers, etc.	Occasionally	M = 2.9 Range 1-5
Maintenance/Repair	Occasionally	M = 2.5 Range 1-5
Follow-up	Frequently	M = 3.5 Range 1-5
Equipment Loan	Seldom	M = 2.2 Range 1-4
Product Demonstration	Occasionally	M = 2.8 Range 1-5
Funding Assistance	Seldom	M = 1.9 Range 1-5
Education and Training	Occasionally	M = 3.2 Range 1-5
Consultation/Technical Assistance	Frequently	M = 4.0 Range 1-5

Most interesting in these data is the apparent uniformity of provision for most services. In other words, most services are provided only occasionally or between seldom and occasionally. Only four services were rated as frequently provided. Services that are more often provided include Evaluation/Assessment, Recommendation/ Prescription, Follow-up, and Consultation/Technical Assistance.

A few more detailed questions were asked regarding three services of particular interest to many in the rehabilitation engineering field: follow-up services, fabrication/customization, and obtaining bids for the purchase of services.

Follow-up services were reported as the fourth most frequent service provided. When does this follow-up occur? For most of those who completed the profile and who provide these services, follow-up is provided when the engineer is notified of a problem (52%) Only 8% (nine respondents) have set intervals prior to closure as their follow-up; eight (7%) track up to six months after closure, and six (5%) track up to one year after closure. Twenty percent reported using other types of follow-up. Some reported tracking clients at other time intervals including ten days, two weeks, four weeks, 60 days, and one year. A few indicated follow-up was dependent on the type of modification or device and several said it was provided on a random basis or as needed. Given the high rates of technology abandonment reported in the literature, this may be an area that deserves closer attention in rehabilitation technology services.

Rehabilitation engineers often speak of the need to customize or fabricate materials in order to ensure that individual needs are met. However, most respondents reported that they occasionally custom design or fabricate equipment. One possible reason may be that facilities are not available in which to complete this task. There may be some evidence for this as not all respondents said they had facilities available, however, over half of the sample (60%) said such facilities were available.

In many cases, counselors in the VR system are responsible for obtaining services and equipment for their clients. Does this include bids for equipment recommended or prescribed by the rehabilitation engineering staff, or is this handled by the engineering staff themselves? Only 35 (30%) reported that they were responsible for obtaining bids for the purchase of rehabilitation technology services.

Specialty Areas of Rehabilitation Technology Services

Table 6 contains a list of specialty areas and the average frequency with which services in these areas were provided in Fiscal Year 1991-1992. The same five point scales listed above was used to rate how often the services in the various specialty areas were provided.

TABLE 6

To what extent did you provide services in the following rehabilitation technology specialty areas during the last fiscal year (91-92)?

Services	*Rating*	*Mean and Range*
Adapted Driving	Seldom	M = 1.9 Range 1-5
Adapted Recreation	Seldom	M = 1.9 Range 1-5
Aids for Daily Living	Occasionally	M = 3.0 Range 1-5
Augmentative and Alternative Communication	Occasionally	M = 2.6 Range 1-5
Computer Access	Frequently	M = 3.8 Range 1-5
Environmental Control	Occasionally	M = 2.6 Range 1-5
Ergonomics	Occasionally	M = 3.2 Range 1-5
Functional Electrical Stimulus	Never	M = 1.1 Range 1-3
Hearing Aids and Devices	Seldom	M = 1.5 Range 1-4
Home Accessibility	Occasionally	M = 3.0 Range 1-5
Prosthetics/Orthotics	Never	M = 1.4 Range 1-4
Robotics	Never	M = 1.3 Range 1-5
Seating and Positioning	Occasionally	M = 2.5 Range 1-5
Visual Aids and Devices	Occasionally	M = 2.9 Range 1-5
Wheeled Mobility	Occasionally	M = 2.5 Range 1-5
Work Site Modification	Frequently	M = 3.9 Range 1-5

Probably the most significant piece of information revealed in these data is that, on average, no services are provided with very high frequency. The most frequent services were Work Site Modification and Computer Access. Six out of the 15 services listed were reported, on average, to be seldom or never provided. These include some obviously complex services like Functional Electrical Stimulation and Robotics and some that might appear surprising like Hearing Aids and Adapted Driving. The data in this section clearly show the preference for work related rehabilitation engineering services, typical of VR agencies.

Summary

Survey results indicate that rehabilitation engineers provide only a portion of the rehabilitation technology services which VR clients receive. A few questions were included in an attempt to examine variations in role between rehabilitation engineers and other technology providers. It appears from these data that engineers provide services which are similar to rehabilitation technology specialists. With this limited information, however, no conclusions can be drawn from these results. Additional study is needed in this area.

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Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

Policies and Procedures

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
1410-C Boston Ave.
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Policies and Procedures

Questions relating to various policies and procedures were included in all sections of the survey. Since many agency staff and others are interested in agency policies, policy questions were pulled from all parts of the survey and results are included in this section of the report.

The daily activities of staff are typically strongly influenced by the agency's policies, procedures and mandates. If a procedure is included in case policy manuals, on forms, or reviewed by quality control measures, it is more likely the procedure will be followed and the service will be considered. The responses to the survey questions concerning policies and procedures in different facets of the Vocational Rehabilitation (VR) process give an indication of what services and protocols are followed by VR agencies.

Consumer Involvement/Interactions

When entering a VR agency for their initial visit, clients are typically interviewed by a VR counselor (89%). This is not surprising since the VR counselor is responsible for the coordination of services. Four agencies reported that a clerical person or a trained intake worker see the potential client on their first visit. Twenty-six percent of the agencies collect information from the client regardless of whether an application is taken during this visit. Table 1 shows the type of information collected from every prospective client during the initial visit.

TABLE 1

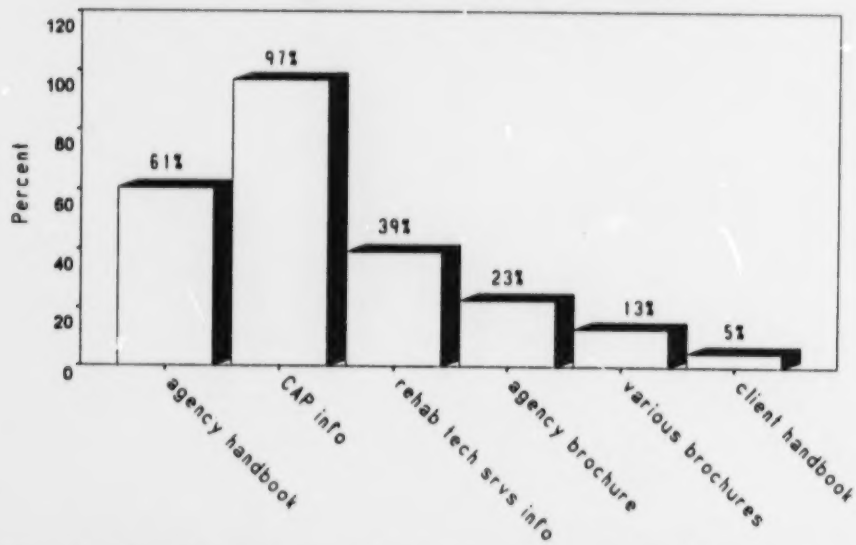
What information is collected from these prospective clients prior to the formal application being completed?

Type of Information	*Percentage (Number) of Agencies*
Name	94% (15)
Address	94% (15)
Disability	81% (13)
Social Security Number	75% (12)
Reason for Seeking Services	63% (10)

For those agencies who ask for information on the initial visit, name and address are almost universally asked. Most agencies also routinely ask for disability, social security number, and the reason for seeking services. One agency also asked for referral source and another asked for the telephone number.

Once seen by the VR counselor, clients provide the necessary information required by the agency and, in return, are given various types of information. Understandably, almost all agencies (97%) provide CAP information as this is a requirement by law. Sixty-one percent of the agencies provide agency handbooks and 23% provide agency brochures. Other types of information provided at the initial visit are indicated in Figure 1.

Figure 1 **Which of the following types of information does your agency provide to VR clients or prospective VR clients?**



As can be seen in Table 2, rehabilitation technology services information is most often provided on an informal basis through discussion. This information is usually conveyed verbally with a few agencies providing brochures. Videotapes are infrequently used. In the Other category, demonstration of products was indicated by two agencies and the use of alternate formats was indicated by one.

TABLE 2

If rehabilitation technology services information is provided, in what form(s) is it provided?

Form	*Percentage (Number) of Agencies*
Talk about it as a service	88% (21)
Provide a brochure, booklet, or audiotape	42% (10)
Show a videotape	8% (2)

Table 3 shows the typical points in the VR process when rehabilitation technology services information is provided.

TABLE 3

If information about rehabilitation technology services is provided, at what points is it provided?

Points When Information Is Provided	*Percentage (#) of Agencies*
When rehabilitation counselor/other staff determine it is appropriate	100% (24)
During IWRP development	96% (23)
When requested by client	92% (22)
During assessment/vocational evaluation	88% (21)
When prospective client inquires about services	79% (19)
At completion of formal application	67% (16)

These data indicate that those agencies who provide rehabilitation technology services information, provide it at a variety of points while the client is receiving VR services. All 24 agencies who say they share this information with consumers report that VR counselors or other staff determine when it is appropriate. This indicates that agencies rely on counselor judgement for determining when the information is needed by the client. Although, based on this list, rehabilitation technology services information is least often provided during the time of formal application (67%), it is still provided by two-thirds of the agencies at this time. It is important to note that many clients may initially inquire about services and have a formal application completed during the same visit. In the Other category, four agencies reported providing rehabilitation technology services at job placement and two reported providing it during post employment.

Rehabilitation Technology Service Delivery

The 1992 Amendments to the Vocational Rehabilitation Act include a much stronger emphasis on assistive technology services provision than ever before. Because of these Amendments, there is little doubt that the provision of rehabilitation technology services will increase in VR agencies throughout the nation in the coming years. Although the Amendments were passed in 1992, responding agencies would not have

had time to incorporate the mandate of these Amendments into their state plan. Responses to the survey questions were given based on Fiscal Year 91-92 information and standards. Therefore, it was important to know what future plans were being considered in regard to the provision of rehabilitation technology services. Thirty-seven agencies responded that they did anticipate changes in the provision of rehabilitation technology services by expanding its use throughout the VR process.

Eighty-eight percent of the responding agencies reported sharing rehabilitation technology information through discussion with the client. Thirty-eight agencies (62%) have written procedures requiring the consideration of rehabilitation technology services throughout the VR process. Twenty-six agencies (43%) have a printed question on the IWRP to address rehabilitation technology services. A small number of agencies (14%) have a standard screening process for identifying clients who might need rehabilitation technology services. Most reporting agencies (75%) require a written rehabilitation technology services report and have time requirements for the completion of these reports. The average length of time for report completion ranges from 10 to 30 working days. It is interesting to note that those VR agencies who have staff members providing rehabilitation technology assessments provide a report within 10 to 15 working days while those who contract with outside service providers for rehabilitation technology assessments provide reports within 10 to 30 working days. As can be seen in Table 4, the report is primarily sent to the rehabilitation counselor. This is not surprising since the counselor is the person who usually refers the client for rehabilitation technology services and is the person who typically completes the necessary paperwork to order equipment or devices for the client.

TABLE 4

To whom is the rehabilitation technology services report sent?

Report Sent To:	*Frequency*
Technology Team	18%
Rehabilitation Counselor	83%
Evaluator	7%
Psychologist	2%
Employer	12%
Device/Service Funding Source	12%
Special Education Teacher	9%
Client/Family Member	18%
Adjustment/Training Specialist	9%
Therapist	5%
Job Coach	9%

Credentials for Rehabilitation Technology Service Providers

Since the field of rehabilitation technology service providers has not yet formulated credentials for these professionals, it is not surprising to learn that only a few VR agencies (9%) require credentials or formal training for these staff members.

Assistive Technology Devices

An assistive technology aid or device, as defined by PL 100-407, is "any item, piece of equipment, or product system, whether acquired commercially off-the-shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities." These items can be costly and difficult to locate. Obstacles to obtaining and properly utilizing assistive technology aids and devices can be decreased through the use of a demonstration, loan, return or used equipment program.

Fifty-eight percent of the responding agencies report having written policies about the procurement and utilization of assistive technology aids and devices. A few agencies report that the rehabilitation counselors share information about these policies with clients. This typically occurs when equipment is to be purchased for the client. A few agencies reported that information about this policy is in the consumer manual or on a client information sheet. One agency reported that this information is not typically shared with the client.

Demonstration Programs

Demonstration programs provide consumers with disabilities the opportunity to tryout assistive aids and devices before making a purchase. Often aids and devices are purchased by consumers with disabilities only to determine later that the purchased items do not meet their needs. For example, a client with quadriplegia might purchase a laptop computer and use a mouthstick for data entry. Later it is determined that the small size of the laptop makes it difficult for him/her to use. A desk top computer with its larger keyboard could make data entry much easier. Without the benefit of tryout, this consumer has made a substantial purchase and will have to make another one to correct the situation. Of the 60 responding VR agencies, 49 indicated that there is an assistive technology aids and devices demonstration program available for their clients and staff. Twenty-two of these programs are operated by VR agencies.

Loan Programs

Loan programs offer clients with disabilities the chance to use an aid or device on a temporary basis. For instance, the consumer might try out an electric wheelchair, and it is determined appropriate based on the consumer's disability. However, if the consumer is unable to use the electric wheelchair at his/her residence, the chair would be useless or, at best, other modifications would be necessary. Consumers attending educational institutions may need aids and devices while in training but find these items are no longer needed once the education process is completed. Therefore, a loan of aids and devices would prevent this consumer from having to purchase an item that would no longer be used. Of the 60 agencies responding, 40 indicated they have a loan program available for their clients. Twenty-two of these programs are operated by VR agencies and 22 are operated by another agency. The overlap of these numbers is caused by a few VR agencies as well as an outside agency sharing in the operation a loan program.

Return Programs

Return programs provide the advantage of equipment abandoned by one client to be utilized by another. Consumers might abandon assistive technology aids and devices due to changes in their disability, environment or lifestyle. Sometimes abandonment is positive in that the client's disability stabilizes and the assistive technology aid or device is no longer needed. Forty agencies (67%) of the 60 that responded indicated they have a return program for assistive technology aids and devices. The majority of these agencies (90%) provide these items to other clients in need.

Used Equipment Programs

Used equipment programs are designed to offer consumers with disabilities a network in which assistive technology aids and devices no longer used can be sold and needed items can be purchased. Respondents indicated that 28 (47%) had a used equipment referral system available to clients to purchase and sell devices. Of these systems, only two (7%) were directly operated by the VR agency. The majority (57%) were operated by Tech Act Projects with another six (21%) operated by other agencies.

Quality Assurance

A quality assurance system provides checks and balances to ensure that policies and procedures of the agency are carried out and consumers' needs are met in a timely and efficient manner. The majority of responding agencies (80%) have quality assurance systems defined in their written policies and 60% of these agencies include rehabilitation technology services in their quality assurance systems.

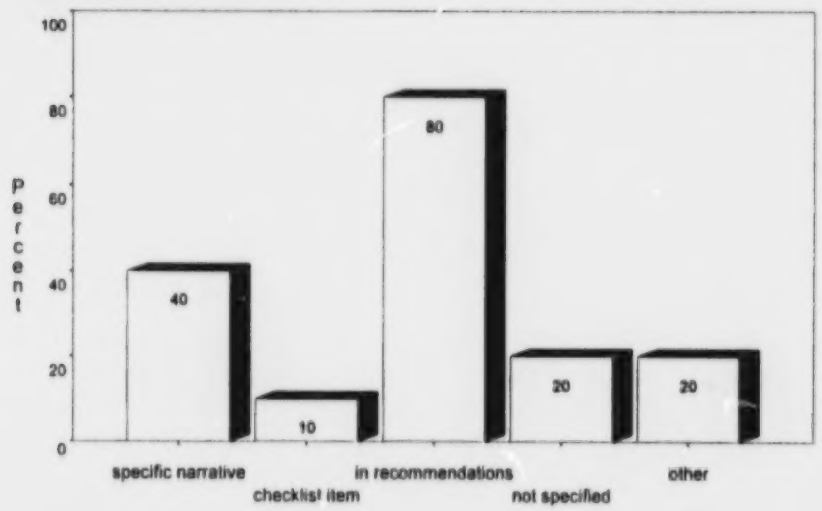
Approximately 47 agencies reported having 81 staff positions designated to perform quality assurance activities as well as other activities. These agencies reported having 27 staff positions that are solely dedicated to quality assurance responsibilities. Most of the staff members responsible for quality assurance are at the middle management level.

Vocational Evaluations

On average, 31% of VR clients participate in a vocational evaluation. These evaluations assist the client and VR counselor in determining vocational abilities, interests, and employability. Rehabilitation technology services are sometimes needed during this process to enable the consumer to participate in the vocational evaluation or may be recommended as a result of the vocational evaluation. Of the responding agencies, 29 (53%), indicated they have written policies which establish procedures for the administration of vocational evaluations. Only 14 (26%) of these agencies have policies which reference the use of rehabilitation technology services in vocational evaluations. Additionally, only 18% of the agencies have policies requiring vocational evaluators to consider services from a rehabilitation technology specialist during the vocational evaluation process.

A standardized report of the vocational evaluation results and recommendations is required by 36% of the agencies. Figure 2 indicates ways the vocational evaluation report incorporates rehabilitation technology services and assistive technology aids and devices information.

Figure 2 **How does the vocational evaluation report's format incorporate rehabilitation technology services and assistive technology aids and devices information?**



It appears that, when a written report is required, rehabilitation technology services are incorporated into the vocational evaluation primarily in the recommendations section.

Summary

VR agencies have begun to include in their policies, procedures designed to insure the provision of rehabilitation technology services. In a research study to be conducted as a part of this grant, one aspect of the study will examine the impact of selected policies on the actual provision of rehabilitation technology services.

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Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

Rehabilitation Technology Service Delivery

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
1410-C Boston Ave.
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Rehabilitation Technology Service Delivery

The manner in which rehabilitation technology services are delivered and how the programs are managed varies greatly across VR agencies. Since no particular model or set of models were utilized in establishing these service delivery programs, it is difficult, now that they have been established, to identify models which clearly describe these programs. Models are, therefore, not identified here. These results do, however, provide some insight into how these service delivery programs are organized. An attempt to classify rehabilitation technology service delivery programs into models is the subject of another paper available from CRTS entitled: *Rehabilitation Technology Service Delivery Models in Vocational Rehabilitation Agencies: A Multi-Level Approach.*

Organization of Rehabilitation Technology Service Delivery Programs

Twenty-five agencies or 43% of those responding reported that they have one primary service delivery area for the purpose of providing rehabilitation technology services to their clients. In other words, rehabilitation technology services are provided from an office or several offices each of which serves the entire state. Thirty-three agencies or 57% of those responding divide the state into several service delivery areas or regions. Using this approach, the state is divided into sections and technology staff are assigned to deliver services in a specified section. For example, everyone living in the eastern part of the state are assigned to location "X" and must seek technology services from these staff. Those living in the western part of the state are assigned to section "Y". It was sometimes difficult for agencies to choose only one response to this question. They appeared to have characteristics of both the centralized and regionalized approaches. For example, some "combined" agencies used both a regional and centralized approach to the delivery of rehabilitation technology services. In a few of these agencies, technology services for persons who are blind or visually impaired are located in a central location and services for persons with other disabilities are located regionally. For more indepth discussion of the centralized versus regionalized approach, reference should be made to the paper available from CRTS entitled: *Rehabilitation Technology Service Delivery Models in Vocational Rehabilitation Agencies: A Multi-Level Approach..*

Regional Service Delivery Programs

Several approaches are used in dividing the state into regions or areas. Over half (53%) of the agencies divide the state into multi-county areas (i.e., several counties make up one region). About 10% divide the state into regions by county (i.e., each county is a region). Another strategy used involves dividing the state by cities (6%). Some agencies reported using previously established regions or divisions (established

for other services for this agency or other agencies). A few agencies did not explain how their regions were divided.

Of the 33 agencies that divide the state into regions to provide rehabilitation technology services, 25 (76%) provide the same core set of services in each region. While providing a core set of services in each region, most agencies (72%) reported that the regions also specialize in a particular service delivery area or type of disability. Special service delivery areas identified by survey respondents include: vehicle modification, seating/mobility, computer access, electronic devices, environmental controls, and augmentative communication. Disability areas which agencies reported specializing in include blind, hearing impaired/deaf, physically disabled, and multiply disabled. Of those agencies reporting regions which specialize in some area, 82% said they share this specialty expertise with the entire state. In other words, a client may get a basic technology assessment in his/her own region but be referred to another region for vehicle modification services.

Respondents were asked to describe what professionals including VR employees and outside service providers are assigned to each area to provide rehabilitation technology services. Rehabilitation engineers, occupational therapists, physical therapists, speech/language pathologists, and rehabilitation technology specialists were among the professionals most frequently listed. Counselors, low vision specialists, driver evaluation/trainers, rehabilitation teachers, and fabrication specialists were also occasionally mentioned.

Location of Rehabilitation Technology Services

In an attempt to further describe the rehabilitation technology service delivery program in VR agencies, questions were asked to determine where (from what location) technology services are provided. Two locations were defined and agencies were asked to report what percentage of services are offered from each location. The two locations were described as vehicle-based and facility-based. Definitions are listed in Table 1. It is possible that some agencies did not understand the definitions when responding to this question. There is a fine distinction between being equipped to provide most or all of the services from a vehicle versus traveling to various locations to provide some services but returning to the facility to complete most services. This confusion may account for some inaccuracies in agency reporting for this question.

TABLE 1

What percentage of rehabilitation technology services offered by your agency are provided from: a facility? a vehicle?

Rehabilitation Technology Services Provided from a Vehicle - A specially equipped vehicle such as a van, truck, trailer, etc. from which rehabilitation technology services are provided. The primary purpose of this vehicle is to provide a place to conduct assessment, fabrication, and/or other services. These services may be provided by VR employees or outside service providers.

Rehabilitation Technology Services Provided from a Facility - A building(s) in which clinics, offices, and/or labs are housed as the site(s) from which rehabilitation technology services are provided. The service provider may occasionally go out to other sites to provide services, but the base of operations is non-mobile. These services may be provided by VR employees or outside service providers.

Location	*Percentage*	*Range*
Facility	90%	10% to 100%
Vehicle	12%	0% to 90%

Thirty-seven percent of the agencies provide services from both vehicle and facility locations. All agencies provide at least some services (minimum of 10%) from a facility. Only five agencies primarily (more than 50% of the time) use a vehicle for service delivery. Sixty-three percent of the agencies reported they provide no services from a vehicle.

Vehicle-Based Programs

In vehicle-based programs, the average number of vehicles used was three with a range from one to eight. As can be seen in Table 2, vans are the most popular vehicle used for vehicle-based services. This is probably due to the fact that they offer more space than a car for carrying equipment and they are not as expensive or difficult to drive as using a truck or trailer. The number of cars reported in use probably reflects confusion about the question more than the number of agencies using cars in a vehicle-based service delivery program. However, one "Blind" agency reported using a car for vehicle-based services. For the type of rehabilitation technology services provided for persons who are blind or visually impaired, a car would provide adequate space for these services.

TABLE 2

What type of vehicle does your rehabilitation technology specialist use when providing services?

Types of Vehicles Typically Used	*# of Agencies Reporting Use*
Van	12 (52%)
Truck	7 (30%)
Trailer	6 (26%)
Motor Home	0 (0)
Car	10 (44%)

Table 3 shows the percentage of services provided by VR employees and outside service providers in a vehicle and in a facility. It is interesting to note that VR employees based in a facility provide less custom designed devices, product demonstration, device training, maintenance and repair, and less fitting and adjustment than outside service providers. Employees provide more funding assistance, equipment loan, equipment purchase, and follow-up services than outside service providers in the facility-based model.

Use of Vendors

Thirty-four agencies or 60% of those responding indicated that they use vendors of durable medical equipment (DME/rehabilitation technology suppliers) to provide rehabilitation technology services. Approximately 15% of the rehabilitation technology services (apart from product sales) are provided by DME vendors. The amount of services ranges from zero to 80%.

Eighty-eight percent of the responding agencies stated they monitor DME dealers/rehabilitation technology suppliers. Table 4 shows the various mechanisms used to monitor these vendors.

Table 3 **Using the list below, please indicate which rehabilitation technology services are provided from the vehicle by VR employees and outside service providers, and which are provided from the facility by VR employees and outside service providers.**

Rehabilitation Technology Service	Vehicle		Facility	
	VR	OUTSIDE	VR	OUTSIDE
Eval/Assessment	12%	22%	62%	67%
Recommendation/ Prescription	10%	22%	57%	73%
Equip Procurement	7%	12%	67%	30%
Fitting/Adjustment	10%	18%	32%	73%
Custom Design Fab/ Adaptation	5%	17%	37%	72%
Device Trainingof Consumers/ Care Givers	10%	22%	48%	65%
Maintenance/Repair	7%	20%	33%	75%
Follow-Up	8%	13%	68%	48%
Equipment Loan	5%	12%	53%	42%
Product Demonstration	3%	15%	48%	70%
Funding Assistance	5%	7%	67%	35%
Education & Training	8%	13%	60%	62%
Consultation/ Technical Assistance	12%	20%	67%	67%

TABLE 4

Mechanisms Used to Monitor Rehabilitation Technology Suppliers of VR Services

Monitoring Mechanism	*Rating*
Direct Supervision by Rehabilitation Technology Staff	9 (26%)
VR Staff Review of Written Specifications	22 (65%)
Gather Consumer Satisfaction Information	12 (35%)

Provision of Technology Services

Several questions asked on the survey were designed to discover details about how rehabilitation technology services are delivered to VR clients. Identification of clients who may need rehabilitation technology services is a first step in any service delivery program. Few agencies (14%) have established a standard screening process for identifying clients who might need these services. As can be seen on Table 5, the rehabilitation counselor is the most frequent source of referrals for rehabilitation technology services. Other people occasionally or seldom refer clients. Even those who were reported as occasionally referring clients were at the low end of that scale. Respondents were asked to rate the frequency of referral for rehabilitation technology services on a five-point scale: **1=Never; 2=Seldom; 3=Occasionally; 4=Frequently;** and **5=Almost Always**. This scale is used on several questions contained in the survey. The descriptive rating, mean rating, and range are reported in Table 5.

TABLE 5

How often do each of the following people refer clients for rehabilitation technologyservices?

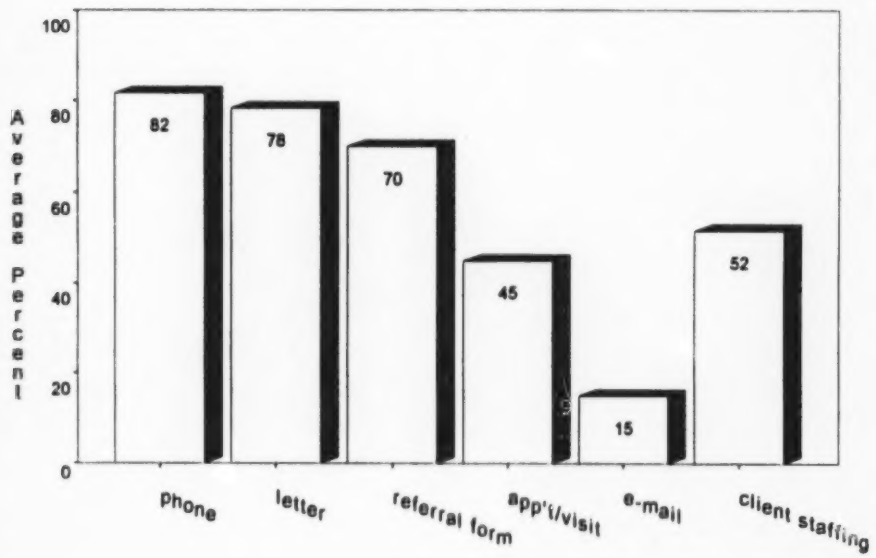
Referral Sources	*Rating*	*Mean and Range*
Client Self Referral	Occasionally	M=2.8 Range 1-4
Rehabilitation Counselor	Frequently	M=4.1 Range 3-5
Adjustment Training Specialist	Occasionally	M=2.5 Range 1-5
Vocational Evaluator	Occasionally	M=2.6 Range 1-4
Job Coach	Seldom	M=2.4 Range 1-4
Psychologist	Seldom	M=1.7 Range 1-3
PT, OT, Speech Pathologist	Occasionally	M=2.5 Range 1-4
Employer	Occasionally	M=2.6 Range 1-4

Agencies reported using a few other referral sources. These include:

- placement specialist,
- independent living specialist,
- family member,
- vendor,
- rehabilitation teacher,
- special education teacher,
- "Tech Act" counselor, and
- medical personnel.

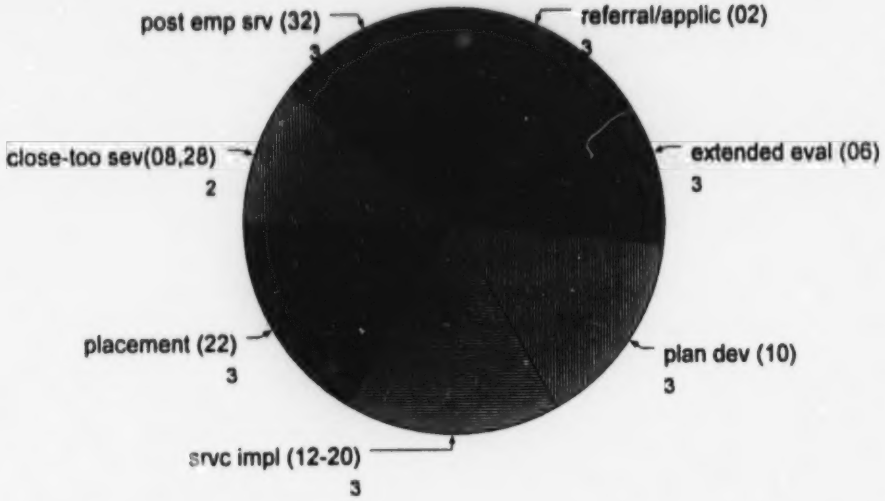
Figure 1 shows how client referrals are typically made to rehabilitation technology services. Most programs had more than one referral method. It is worth noting that the relatively informal method of telephoning the technology staff was as popular in the agencies as the more formal written documentation of letter or referral form.

Figure 1 How are these client referrals made?



As can be seen in Figure 2, no particular stage in the VR process seemed to generate more referrals to rehabilitation technology services than any other with the exception of closure-too severe when there were typically fewer referrals. The mean rating was slightly higher during the Services Implementation ($\underline{M}$=3.4) and Placement stages ($\underline{M}$=3.4).

Figure 2 **For the following stages in the VR process, estimate the degree to which your agency provided rehabilitation technology services during the last fiscal year (91-92).**



Number of VR Clients Receiving Rehabilitation Technology Services

One question asked in the survey was what percentage of the total number of clients served in status 02 through 34 would you estimate received some type of rehabilitation technology services provided through your agency (by VR employees or outside service providers). Agencies reported that 26% of their clients received these services. The percentages ranged from a low of 1% to a high of 90%. When broken down by type of agency, the percentages vary (see results below). Due to the nature of the disability for which services are being provided, it is not surprising that "Blind" agencies provide the most assistive technology for their clients.

"General" Agencies	***"Blind" Agencies***	***"Combination" Agencies***
17%	44%	20%
(Range = 2% to 60%)	*(Range = 5% to 90%)*	*(Range = 1% to 84%)*

Results for this question may be suspect because there is no standard definition for rehabilitation technology services. Right now, each agency creates their own definition and, since there are no reporting requirements, each agency reports the provision of these services according to their own rules. Although a definition was provided, agencies probably used their own definition of rehabilitation technology services. As a result, agencies may be reporting based on different standards. This could cause discrepancies in the data.

Barriers to the Appropriate Use of Rehabilitation Technology Specialist

The barriers to the appropriate use of rehabilitation technology specialists reported in Table 6 are listed according to their frequency of occurrence. In addition to the traditional time and money barriers, the most frequently occurring barriers appear to cluster around lack of knowledge of what the rehabilitation technology specialist could provide and how these services could benefit the clients.

TABLE 6

What are the barriers to the appropriate use of rehabilitation technology specialists within VR agencies?

BARRIERS	%
Lack of knowledge of Rehabilitation Technology Specialist's role in vocational evaluation process	57
Time constraints of the Rehabilitation Technology Specialist	53
Lack of marketing Rehabilitation Technology services within agency	43
Budget constraints to purchase assistive technology aids and devices	35
Budget constraints to pay for rehabilitation technology services	30
Counselors do not see benefit of rehabilitation technology services	27
Time constraints of vocational evaluation	22
Rehabilitation Technology Specialist' knowledge about vocational evaluations	17
Rehabilitation technology referral procedures	13
Lack of Rehabilitation Technology Specialist	8
Agency directives	8
No barriers	7

Utilization of Technology Services

Eighty-three percent of the agencies reported that some parts of their state had higher utilization of technology services than others. Table 7 lists the major factors contributing to this difference in utilization. It appears that the closer the proximity of the services, the greater likelihood they will be used. Understanding of technology services also played a role in increasing the use of technology services.

TABLE 7

Are there specific offices or geographic regions in your state which have higher utilization of rehabilitation technology services?

Typical Reasons for Unequal Utilization	*Percent (#) of Agencies*
Proximity to Rehab Tech Services	66% (36)
Greater Concentration of Disabled Population	55% (30)
Rehab Tech Expertise in Individual Offices	53% (29)
Awareness of Tech Services by VR Staff	42% (23)
History of Technology Related Activity	31% (17)
Location of Specialized Caseloads	26% (14)
Availability of Rehab Tech Specialist	24% (13)

Rehabilitation Technology Assessment

Opinions vary as to what exactly is involved in a rehabilitation technology assessment. In order to determine what elements are typically included in assessments for VR clients, agencies were asked to specify what is typically included in their rehabilitation technology assessments. Table 8 shows elements that are routinely included. It is interesting to note that almost everyone includes interview, needs assessment/problem identification, and recommendations. Feasibility/cost benefit analysis is included by less than half of the agencies.

TABLE 8

What is routinely included in a rehabilitation technology assessment conducted for your clients?

Component	*Rating*	*Component*	*Rating*
Interview	95% (57)	Functional Assessment	80% (48)
Intake Form	65% (39)	Work Site Assessment	73% (44)
Feasibility/Cost-Benefit Analysis	43% (26)	Equipment Tryout	73% (44)
Needs Assessment/Problem Identification	95% (57)	Recommendations	92% (55)
Home/Residence Assessment	57% (34)	Other	12% (7)

The amount of time spent on the initial assessment of clients varies somewhat. As can be seen in Table 9, most assessments lasted approximately one to four hours.

TABLE 9

As a part of your initial rehabilitation technology assessment, how much time is spent with the client?

Amount of Time	*Rating*
Less than One Hour	5% (3)
One to Two Hours	47% (28)
Half Day	28% (17)
Full Day	7% (4)

As can be seen in Table 10, no one approach to conducting rehabilitation technology assessments appears to predominate in VR agencies. There were a few agencies who reported almost always using an approach and a few that reported never using an approach. The vast majority reported seldom to occasionally using the approaches listed. In the other category, most agencies reported the technology specialist individually assessing the client.

TABLE 10

How often are the following approaches used in conducting rehabilitation technology assessments?

Assessment Approaches	*Rating*	*Mean and Range*
The team, as a group, assesses the client	Occasionally	M=2.8 Range 1-5
Each team member individually assess client and works together to develop recommendations	Occasionally	M=3.0 Range 1-5
Each team member individually assess the client and develops their own report of recommendations	Occasionally	M=3.0 Range 1-5

Table 11 shows the professionals typically involved in rehabilitation technology assessments. Assistive technology specialists/rehabilitation technologists and rehabilitation engineers are the professionals most frequently involved in these assessments.

TABLE 11

How frequently are the following professionals (VR employees or outside service providers) involved in rehabilitation technology assessments for VR clients?

Professional	*Rating*	*Mean and Range*
Rehabilitation Engineer	Occasionally	M=3.4 Range 1-5
Assistive Technology Specialist/ Rehabilitation Technologist	Frequently	M=3.7 Range 1-5
Occupational Therapist	Occasionally	M=2.9 Range 1-5
Physical Therapist	Occasionally	M=2.7 Range 1-4
Rehabilitation Technology Supplier/DME Dealer	Occasionally	M=2.7 Range 1-5
Speech/Language Pathologist	Occasionally	M=2.5 Range 1-4

Table 12 shows the settings in which rehabilitation technology assessments are typically conducted. It appears that assessments are fairly evenly divided in where they are

conducted although slightly more are conducted at the work site. It is interesting to note that although 90% of the programs are facility-based, technology providers leave the facility fairly frequently to provide services outside of their facility.

TABLE 12

How often are rehabilitation technology assessments conducted in the following settings?

Setting	*Rating*	*Mean and Range*
Rehabilitation Technology Facility	Occasionally	M=3.3 Range 1-5
Home/Residence	Occasionally	M=3.2 Range 1-5
Work Site	Frequently	M=3.5 Range 2-5

As can be seen in Table 13, two areas are frequently included in the functional assessment part of the rehabilitation technology assessment: Physical and Vision. Cognitive, Hearing, and Speech/Language are only occasionally included. The only other area mentioned was behavior and the agency reporting this area said it was seldom included.

TABLE 13

During the last fiscal year (91-92), how frequently did VR clients receive a functional assessment in the following areas as part of their rehabilitation technology assessment?

Areas	*Rating*	*Mean and Range*
Physical	Frequently	M=3.6 Range 1-5
Cognitive	Occasionally	M=3.2 Range 1-5
Hearing	Occasionally	M=3.1 Range 1-5
Speech and/or Language	Occasionally	M=2.9 Range 1-5
Vision	Frequently	M=3.8 Range 1-5

Most agencies (75%) require a written rehabilitation technology services report. Table 14 shows the people to whom this report is typically sent.

TABLE 14

To whom is the rehabilitation technology services report sent?

Report Sent To	*Frequency*
Technology Team	18%
Rehabilitation Counselor	83%
Evaluator	7%
Psychologist	2%
Employer	12%
Device/Service Funding Source	12%
Special Education Teacher	9%
Client/Family Member	18%
Adjustment/Training Specialist	9%
Therapist	5%
Job Coach	9%

Not surprisingly, the rehabilitation counselor receives the report far more frequently than any other source. The psychologist receives the report least frequently probably reflecting the limited involvement of the psychologist in the rehabilitation technology assessment.

External Linkages

An effective way of approaching overlapping mandates of various agencies in dealing with their consumers who have multiple issues across several environments is through the utilization of linkages. These linkages vary in their level and formality of coordination attempts. Several questions in the survey dealt with linkages which involve the sharing of information, services, staff and resources as well as new or innovative linkages that may exist as they relate to rehabilitation technology. Responses are summarized in this paper. A more indepth examination of external linkages in VR agencies will be conducted in Year 3 of the grant.

General information linkages are typically the lowest level and least formal type of linkage. Eighty-three percent (50) of the agencies reported sharing information on a regular basis with other agencies. Twenty-three (47%) of the agencies share this information in meetings. Agencies reported that these meetings were typically held on a quarterly basis. Only six of the agencies had written agreements regarding this type of information sharing linkage.

A greater degree of coordination and the sharing of specific resources marked the higher level, more formal linkage efforts. These linkages typically involved sharing services, staff,and resources and typically require written agreements. As agencies progress toward higher levels of coordination, they begin to lose their autonomy. Since agencies tend to want to maintain autonomy, these higher level more formal linkages are difficult to achieve. One example of this type of linkage is the reorganization of government structure to form an umbrella agency with agencies providing similar services placed within this structure.

While many agencies reported sharing information, fewer agencies shared other resources. Table 15 shows the types of resources shared and the number of agencies using this type of linkage.

TABLE 15

Does your agency share staff members or other resources with another agency to provide rehabilitation technology services.

Shared Resources	*# of Agencies*
Equipment	9
Funding	14
Space	4
Staff	15

Only nine agencies reported having written agreements regarding these linkages. In the follow-up study on linkages to be conducted in Year 3, additional information will be gathered from these agencies to more fully explain how these services are shared.

Summary

All responding VR agencies have established some type of rehabilitation technology service delivery program within their agencies. Although they provide similar services, the manner in which these services are delivered varies across agencies. For example, agencies vary on the how the state is divided for service delivery and who provides the services. There were also some similarities across the programs. Most programs, for example, provided services from a facility base rather than a vehicle. Since VR agencies have only recently been required to provide rehabilitation technology services to their clients, these programs are still in the process of being developed. Increasing demand for these services will shape future development.

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Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

Rehabilitation Technology in the Assessment/Vocational Evaluation Process

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
1410-C Boston Ave.
West Columbia, South Carolina 29170

Rehabilitation Technology in the Assessment/Vocational Evaluation Process

Vocational Evaluations in Vocational Rehabilitation (VR) Agencies

Assessment services are an important aspect of the vocational rehabilitation process. Vocational evaluation is one facet of the broad array of assessment services necessary for many VR clients. According to survey findings, agencies vary greatly in their use of vocational evaluations on clients. Agencies reported as few as two percent of their clients having vocational evaluations and as many as 100%. On average, vocational evaluations are conducted on 31% of VR clients. It is possible that this number may increase due to the changes (established in the 1992 Amendments to the Vocational Rehabilitation Act) in eligibility and the need to obtain "clear and convincing evidence" to substantiate the performance capabilities of persons with disabilities.

Although vocational evaluations can be conducted at any time in the rehabilitation process, vocational evaluations typically occur in the initial phases; Referral (02), Extended Evaluation (06), and Plan Development (10). Increased use of vocational evaluation and other assessment services have been noted in Status 10, Plan Development. All responding agencies indicated that clients are primarily referred for vocational evaluation services by their rehabilitation counselor. One agency indicated that the clients could refer themselves for vocational evaluation and another agency indicated that the special education teacher could also refer clients.

Referral for Vocational Evaluation Services

Clients are routinely referred for vocational evaluations in a variety of ways. Table 1 shows that standardized referral forms, phone, letter, and client staffing are among the most popular methods for referring clients when the vocational evaluators are VR employees. When the evaluators are outside service providers, phone, letter, and standardized referral form are equally popular methods of referral.

TABLE 1

How are client referrals to vocational evaluation services routinely made?

Method of Referral	*Employee*	*Outside Service Provider*
Phone	48%	40%
Letter	33%	40%
Standardized Referral Form	52%	40%
Appointment/Personal Visit	21%	24%
Electronic Mail	11%	2%
Client Staffing	28%	26%

Purpose of Vocational Evaluations

Vocational evaluations are conducted in VR agencies for a variety of purposes. Table 2 displays the results of a survey question on the reasons for conducting vocational evaluations. The VR agencies were asked to rate the reasons on a five point scale: **1 = Never; 2 = Seldom; 3 = Occasionally; 4 = Frequently;** and **5 = Almost Always.** This scale is used on several questions contained in the survey. The descriptive rating, mean rating, and range are reported in the table.

TABLE 2

Why are vocational evaluations typically conducted in your agency?

Reasons	*Rating*	*Mean and Range*
To help determine eligibility for VR services	Occassionally	M = 3.0 Range 1-5
To enable the client to have a more realistic understanding of him/herself as a worker	Frequently	M = 4.0 Range 2-5
To determine vocational and other client abilities and limitations	Almost Always	M = 4.5 Range 3-5
To determine which services are needed	Frequently	M = 3.8 Range 1-5
To develop an appropriate IWRP	Frequently	M = 3.9 Range 1-5
To improve the likelihood of employment	Frequently	M = 3.9 Range 1-5

Table 2 shows that vocational evaluations are only occasionally used for determining eligibility for VR services. They are most frequently used to help the client and counselor have a better understanding of the client as a worker, to identify needed services, and to help improve employment opportunities. Not surprisingly, vocational evaluations are almost always used to determine vocational potential and other client abilities and limitations.

Length of Vocational Evaluations

The amount of time spent conducting vocational evaluations varies considerably across agencies. No reasons for this variation were requested, however, as can be seen in Table 3, 36% of the agencies said that no single amount of time can be given because the length varies by need. Three to five days appears to be the most popular length although less than one-third of the agencies have vocational evaluations of this length.

TABLE 3

Considering all vocational evaluations conducted with your clients, how many days do they typically last?

Length of Evaluation	*Rating*	*Length of Evaluation*	*Rating*
Less than one day	12%	One week	17%
One to two days	16%	Two weeks	19%
Three to five days	29%	No single model	36%

Vocational Evaluation Settings

Vocational evaluations are conducted in a variety of settings. As can be seen in Table 4, the community rehabilitation center is the most popular setting followed by the VR office. About one-third of the agencies utilize mobile evaluation units.

TABLE 4

In what settings do VR clients receive vocational evaluations?

Setting	*Rating*	*Setting*	*Rating*
VR office	59%	Mental health facility	28%
School	40%	Private rehabilitation business	40%
Community rehabilitation center	76%	University program	26%
Hospital/rehabilitation center	40%	Mobile evaluation unit	33%
Developmental disability facility	29%	Corrections	9%

In order to meet the specialized needs of some clients, VR agencies have established vocational evaluation sites where more intensive or specialized vocational evaluations can be conducted. According to survey results, 22 agencies or 43% of those responding have specialized vocational evaluation sites where employees conduct evaluations. Twenty-six agencies or 57% of those responding reported contracting with outside service providers who have specialized vocational evaluation sites where these evaluations can be conducted. Most of the agencies (80%) have from one to three of these specialized sites in their state. Many agencies reported that these sites are available for all clients while some reported they primarily serve persons who are blind, visually impaired, deaf, spinal cord injured, learning disabled, or persons with a traumatic brain injury.

In order to insure the quality of their vocational evaluation services, some agencies have sought accreditation from the Commission on Accreditation of Rehabilitation Facilities (CARF). When asked to rate how often their agency utilized CARF accredited evaluation facilities, on average, the agencies reported they use them occasionally (3.4 on a 5 point scale). Nine agencies reported they never use CARF accreditation, two reported seldom using it, and 18 reported almost always using CARF accredited facilities.

Components of Vocational Evaluations

Comprehensive vocational evaluations can be composed of a variety of assessment techniques depending on the purpose of the testing and the needs of the client. Table 5 shows that the most frequently used assessment techniques are psychometric testing (66%), work samples (57%), and use of simulated work stations (47%).

TABLE 5

Approximately what percentage of all vocational evaluations conducted with your clients include the following types of assessments?

Type of Assessment	*Rating*
Psychometrics	66%
Work Samples	57%
Simulated Job Stations	47%
On-the-Job Evaluations	22%
Physical Capacities Assessment	43%
Learning Styles Assessment	41%
Rehabilitation Technology Assessment	24%

It is interesting to note that of the more specialized assessment approaches such as physical capacities, learning styles assessment, and rehabilitation technology assessment, rehabilitation technology assessment is the least frequently used (24%).

Rehabilitation Technology in the Vocational Evaluation Process

One place within the VR process in which rehabilitation technology can make the difference between successful performance and failure is the vocational evaluation process. Several questions in the survey were designed to estimate to what extent rehabilitation technology services were used in vocational evaluations. According to responses from the 41 agencies answering these questions, the actual use of rehabilitation technology resources and services appears limited. Although 72% of the respondents reported that they had rehabilitation technology specialists available, on average, rehabilitation technology specialists were brought in to work with only 17% (range = 1-90%) of cases during fiscal year 1991-92. A question in another part of the survey also asked about the extent of use of rehabilitation technology specialists during vocational evaluation. Once again, only occasional involvement was reported (2.8 or a 5 point scale). The 1992 Amendments to the Rehabilitation Act stress that rehabilitation technology should be included in assessment activities. The use of rehabilitation technology specialists in the vocational evaluation process are, therefore, likely to increase.

A follow-up question on where in the evaluation process rehabilitation technology specialists were used verifies that their use is limited in all stages of the vocational evaluation process. As can be seen in Table 6, the only phase in the vocational evaluation process where there is even "occasional" use of rehabilitation technology specialists is in Outcomes/Recommendations.

TABLE 6

Rate how frequently rehabilitation technology specialists provide assistance in each phase of the vocational evaluation process.

Phase	*Rating*	*Mean and Range*
Pre-Evaluation Staffing	Seldom	M = 1.7 Range 1-5
Initial Interview	Never	M = 1.4 Range 1-2
Evaluation Planning	Seldom	M = 2.0 Range 1-5
Assessment	Seldom	M = 2.4 Range 1-5
Career Exploration	Seldom	M = 2.1 Range 1-5
Outcomes/Recommendations	Occasionally	M = 3.3 Range 1-5

The range of responses indicate some variation among agencies in the use of rehabilitation technology specialists in the vocational evaluation process. A few agencies almost always utilize these specialists and a few report never using them.

Seventy-six percent of the agencies indicated that rehabilitation technology assessments are conducted separately from the vocational evaluation. As can be seen in Table 7, most are conducted after vocational evaluations are completed and 35% are conducted during vocational evaluation.

TABLE 7

When does the rehabilitation technology assessment typically occur?

Before vocational evaluation	43%
During vocational evaluation	35%
After vocational evaluation	53%

Twenty-six agencies require vocational evaluators to develop individualized evaluation/assessment plans for the VR clients. Thirty agencies require vocational evaluators who are outside service providers to develop these plans.

Consideration of Rehabilitation Technology During Referral

In many VR agencies, the integration of rehabilitation technology into vocational evaluation appears to be occurring at a slow pace. Most VR agencies (82%) reported that they do not have a formal policy which requires vocational evaluators to consider using services from a rehabilitation technology specialist during the evaluation process. While 30 VR agencies that employ vocational evaluators reported the use of standardized referral forms for vocational evaluation services, only ten include a place on this form to indicate the need for rehabilitation technology services in the vocational evaluation process. Twenty-three agencies who utilize outside service providers to conduct vocational evaluations reported the use of a standardized referral form for vocational evaluation services. Only seven of these agencies include a place on this form to indicate the need for rehabilitation technology services during the vocational evaluation process.

Vocational Evaluation Report

Twenty agencies (36%) reported vocational evaluators are required to utilize a standardized vocational evaluation report. When asked how rehabilitation technology services are incorporated into this report, eight agencies (40%) said they include it in the narrative section, two (10%) include it as part of a checklist, 16 (80%) include it as part of the recommendations section, and four agencies (20%) said no reference is routinely made. One agency said that reference is made in the job modification section and another agency said that it is made in the behavior modification section.

Barriers to the Use of Rehabilitation Technology

As can be seen in Table 8, no one barrier was identified as being significantly more detrimental than any other in using rehabilitation technology services in the vocational evaluation process. It is interesting to note that limited funds were seldom considered a barrier to providing these services. There was individual variation in the experience of barriers as reflected in the ranges for every barrier. Some people never experienced some of the barriers, while other almost always experienced some of the barriers.

TABLE 8

How often are the following barriers to using rehabilitation technology services in the vocational evaluation process experienced by your agency?

Barrier	*Rating*	*Mean and Range*
Rehabilitation technology specialist not available	Occasionally	M = 3.0 Range 1-5
Assistive technology aids and devices not available	Occasionally	M = 3.1 Range 1-5
Insufficient time to include within the vocational evaluation	Occasionally	M = 2.8 Range 1-5
Vocational evaluators do not identify needs	Occasionally	M = 3.0 Range 1-5
Limited funds for rehabilitation technology services	Seldom	M = 2.4 Range 1-5
Norm-referenced tests allow only specified changes	Occasionally	M = 2.5 Range 1-5
Limited knowledge by vocational evaluators about rehabilitation technology services by staff	Occasionally	M = 3.2 Range 1-5

Rehabilitation Technology Service Providers

When the need for rehabilitation technology services is identified in the vocational evaluation process, there are a variety of professionals who typically provide these services. Table 9 shows which professionals are utilized.

TABLE 9

If the need for rehabilitation technology services is identified during the vocational evaluation process, who would most often provide these services?

Technology Provider	*Rating*	*Mean and Range*
Rehabilitation engineer	Occasionally	M = 3.3 Range 1-5
Assistive technology specialist/ rehabilitation technologist	Occasionally	M = 3.3 Range 1-5
Occupational therapist	Occasionally	M = 2.8 Range 1-5
Physical therapist	Occasionally	M = 2.6 Range 1-4
Speech/Language Pathologist	Occasionally	M = 2.5 Range 1-4

These data indicate that all the professional staff listed are used with the same average frequency. Looking at the range of use reported, only speech/pathologists were used by everyone in the sample, and no less than occasionally by anyone. In contrast, no one said they almost always used physical therapists to provide rehabilitation technology services but many respondents said they used other professionals almost always. Respondents reported that they use other professionals not listed above. These include: optometrists or ophthalmologists, industrial engineers, and the rehabilitation teachers. One agency reported using the counselor and vocational evaluator for most low vision adaptations.

Accommodations in the Assessment Process

While many see the need to address assistive technology for on-the-job performance, it is not always as obvious that individuals may need rehabilitation technology services simply to complete the assessment process. For example, someone with low vision would not easily be able to complete a standard pencil and paper test. Questions were included on the survey to determine if assistive technology is routinely used in the assessment process and if so, what are the conditions or issues surrounding that use.

Table 10 indicates, on average, how often various modifications/ accommodations are made for individuals with severe disabilities in the vocational evaluation process.

TABLE 10

For individuals with severe disabilities (e.g., physical disabilities, traumatic brain injury, etc.), estimate how often the following types of modifications or accommodations are made during the vocational evaluation process.

Modification/Acommodation	*Rating*	*Mean and Range*
Modify the testing schedule	Frequently	M=3.7 Range 2-5
Select alternate tests	Frequently	M=3.6 Range 2-5
Delete tests	Occasionally	M=3.4 Range 1-5
Modify the tests	Occasionally	M=3.4 Range 2-5
Modify the testing environment	Frequently	M=3.5 Range 2-5
Utilize an aid or assistant	Occasionally	M=3.2 Range 1-5

These data indicate that modifications are often made for individuals with severe disabilities. Moreover, all types of modification are made with the same frequency. The ranges of responses are interesting in that they indicate only two modifications are never used by evaluators, deleting tests and using an aid; otherwise all evaluators have made other modifications at some time or another. Since rehabilitation technology specialists are used in only 17% of the cases, it is assumed that the vocational evaluator would be the primary staff member involved in providing reasonable accommodations. Two of the accommodations most frequently used, lengthening/modifying the schedule and selecting alternative tests, could be completed without any specialized type of assistive technology.

Use of Assistive Technology Aids and Devices

Table 11 indicates on average, how often various assistive technology aids and devices are used for individuals with severe disabilities in vocational evaluation process.

TABLE 11

For individuals with severe disabilities, estimate how often the following assistive technology aids and devices are used in vocational evaluations?

Aid or Device	*Rating*	*Mean and Range*
Adapted furniture	Occasionally	M=2.7 Range 1-5
Adapted switches/controls	Seldom	M=2.4 Range 1-4
Alternative computer access hardware/software	Occasionally	M=2.9 Range 1-5
Assistive listening devices	Occasionally	M=2.5 Range 1-5
Electronic communication devices	Occasionally	M=2.5 Range 1-5
Environmental control device	Seldom	M=2.0 Range 1-5
Jigs/fixtures	Occasionally	M=2.8 Range 1-5
Manual communication aids	Occasionally	M=2.7 Range 1-5
Specialized hand tools	Seldom	M=2.4 Range 1-5
Specialized seating	Occasionally	M=2.7 Range 1-5
Standing/walking aids	Occasionally	M=2.8 Range 1-5
Telephone communication aids	Occasionally	M=2.6 Range 1-5
Visual/magnification/reading aids	Frequently	M=3.5 Range 1-5
Wheeled mobility	Occasionally	M=2.9 Range 1-5
Writing aids	Occasionally	M=3.1 Range 1-5

These data indicate that almost all of the aids and devices listed in Table 11 are used at some time during the vocational evaluation process and most are used at least occasionally. Only visual aids are used frequently, reflecting the large number of individuals with vision impairments served by some VR agencies. Environmental control units, adapted switches/controls, and specialized hand tools are all, on average, seldom used. It is important to note the ranges of use indicating that all devices except for adapted switches/controls are almost always used by at least some vocational evaluators. The contrasting side to this is that each device was ranked as never used by at least a few vocational evaluators. These data do not tell us whether or not there are some vocational evaluators who use devices routinely or others who rarely use aids and devices.

A related question asked if the aids and devices discussed above are available to

all vocational evaluators. This would tell us whether it is people who tend to use or not use devices or if resource availability dictates use. It appears that resources are not all that widespread with only 7 agencies (13%) reporting that aids and devices are available at all sites across the state. Only another 13 (23%) reported availability at most sites. The majority (61%) have resources at selected sites only, with only two agencies reporting that aids and devices for vocational evaluation were not available at all. These data can be explained by the fact that assessments are done at only selected sites in some states.

Resources Available for Making Rehabilitation Technology Recommendations

Agencies were asked if vocational evaluators had access to data base resources on assistive technology aids and devices. Sixty-one percent (34) of the agencies reported in the affirmative. This suggests that while a majority do have access, another 40% are without access to data bases - the most comprehensive and up-to-date system that currently exists.

There are a number of data bases that can be used to search for information on assistive technology aids and devices. Table 12 reflects which one(s) respondents reported that they used.

TABLE 12

What data base resources are currently available?

Data Base Resource	*Percentage (#) Reporting*
Job Accommodation Network (JAN)	54% (31)
Abledata	39% (22)
Hyper-Abledata	19% (11)
Adaptive Device Locator Systems (ADLS)	4% (2)

Given the mission of VR, it is not surprising that the most used data base is the Job Accommodation Network. It should be noted that the pattern of use of the various data bases indicated by the data should not be taken as an endorsement or indication of quality of any system listed. Their use may reflect other issues like ease of operation, cost of resource, availability of trained users, experience of staff, etc.

Another resource for technology aids and devices is through catalogs from device suppliers and manufacturers. This is a relatively simple and inexpensive resource. Only 25 (47%) of the agencies who completed the survey, reported that they maintain a supply of assistive technology aids and devices catalogs in their vocational evaluation units. This would indicate that many vocational evaluators are dependent on other staff, outside consultants, or their personal knowledge and experience to successfully use assistive technology aids and devices in their assessments. This is an area that warrants a closer look.

Summary

Vocational evaluation is a useful tool for rehabilitation counselors in assisting clients to identify vocational abilities and limitations. Rehabilitation technology services can be helpful for those clients who cannot be tested in the traditional setting using traditional testing instruments. As more vocational evaluators become aware of rehabilitation technology and its' benefits for their clients, the use of these services is likely to increase.

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E

Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

Assistive Technology Aids and Devices

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
1410-C Boston Ave.
West Columbia, South Carolina 29170

Assistive Technology Aids and Devices

Among the many priorities which the National Institute on Disability and Rehabilitation Research (NIDRR) announced in the request for proposals for our grant was the examination of Vocational Rehabilitation (VR) agency practices with regards to the purchase of equipment or devices for clients. Several questions in the survey were included which addressed the issues surrounding this equipment purchase. Issues addressed in the survey include funding and procurement, consumer involvement in purchase decisions, and abandonment issues. Since these issues are of critical importance to VR agencies, this section of the final report is devoted to a discussion of the results.

Funding and Procurement of Assistive Technology Aids and Devices

It does not appear that budgets for and tracking of assistive technology aids and devices in VR systems are separated from other services. In most cases, funds and reporting for technology are subsumed within other services. This makes it very difficult to address questions of device usage, costs, and efficacy. We asked a number of questions to get a feel for how VR agencies treat assistive technology aids and devices so that we could identify some programmatic issues that may need closer examination.

Tracking Assistive Technology Aids and Devices

Fifty percent of responding agencies reported they have a mechanism in place to track dollars spent on rehabilitation technology services provided for VR clients. A variety of mechanisms were reported including newly developed accounting codes, service codes, data base software, client expenditure reports, and the general authorizing system. When asked how much money they spent on rehabilitation technology services in fiscal year (91-92), the agencies reported an average expenditure of $194,643. Expenditures ranged from a low of $1000 to a high of $550,000.

Fifty-seven percent of agencies reported tracking expenditures on assistive technology aids and devices. Tracking mechanisms similar to the ones reported for rehabilitation technology services were described by the agencies. Several reported that they are in the process of developing a new system. When asked to estimate how much money was spent for the purchase of assistive technology aids and devices, during fiscal year (91-92), these agencies reported spending an average of $632,647. The amounts ranged from a low of $1,752 to a high of $2,429,229.

Agencies that don't track expenditures on assistive technology aids and devices and rehabilitation technology services were asked to estimate how much money was spent for the purchase of assistive technology aids and devices and rehabilitation technology services during fiscal year (91-92). Twenty-one agencies reported spending an average of $373,702. The amounts ranged from a low of one dollar to a high of $2,603,469.

Procurement Process for Assistive Technology Aids and Devices

The typical procedure for VR (and other governmental organizations) to purchase any item, including assistive technology devices, is to acquire bids for that item from several vendor sources. Vendors who submit the lowest bids are usually chosen to provide the equipment. A number of questions were asked to clarify the procedures for the purchase of assistive technology aids and devices by VR agencies. Forty eight (84%) of the agencies in our sample reported they require bids for the purchase of assistive technology aids and devices. What determines the type of bid required appears to vary by the cost and possibly type of the equipment being ordered. Respondents were asked to report what type and how many bids were required for assistive technology devices falling into several price categories.

For assistive technology aids and devices falling between $0 and $500, 44% of the sample said they required some sort of bid. These bids ranged from the general, for example "a reasonable, competitive bid" to the specific, including a single quote and multiple written or verbal bids. Most bids in this price category tended to be either general or single quotes.

Sixty-two percent of the sample reported they require bids for devices in the $501 to $1500 price range. Again bid types ranged from general to specific but most bids here tended to be multiple (typically three are required) and either written (and some require sealed bids) or verbal.

This same pattern was reported for devices in the $1501 to $2500 price range. A similar number of agencies, 60%, require bids for devices in this group. Some agencies mentioned that the State purchasing agents handled all bids and purchases over $1500. Still others mentioned that sole source providers were used for many higher priced aids and devices, thus no bids were required.

For devices over $2500, the 53% of agencies who require bids, almost exclusively demand three written or verbal bids, with many requiring sealed written bids. The exceptions to these were when state purchasing agents handled high priced devices and when sole providers were on contract.

An addendum to these data were in the form of written comments provided by many agencies. Several said that they keep a list of approved vendors and all bids must come from vendors on that list. For many agencies, bids are not required for lower priced items and devices that are medically prescribed. However, even in these cases, several agencies required that only approved vendors be used. The variety of responses to this series of questions on the bidding process were considerable. The best summary of the data is that most agencies require bids for assistive technology devices, especially those higher in price.

Funding of Assistive Technology Aids and Devices

There are a number of ways in which VR agencies fund the purchase of assistive technology aids and devices. An informal investigation revealed that there is no one standard method of funding. Rather, a number of sources are considered and funding can range substantially from device to device, counselor to counselor and agency to agency. A series of questions were posed to document this anecdotal information and explore the funding process on a national basis. Table 1 contains the average percentage of the total number of devices funded in Fiscal Year 1991-92 using several different funding sources.

TABLE 1

Please order the following list showing the sequence followed in seeking funding for the purchase of assistive technology aids and devices.

Funding Source	*Average Percentage of Devices Funded in FY 91/92*
VR Funds	76% (range 45% - 100%)
Similar Benefits Resources	16% (range 2% - 55%)
Employers	9% (range 1% - 25%)
Disability/Advocacy Groups	3% (range 0% - 10%)
Philanthropic Sources	3% (range 0% - 5%)

It is clear from Table 1 that VR agencies provide funds for the majority of assistive technology aids and devices they procure for clients. Similar Benefit Resources provide another significant source of funds (e.g., private insurance, Medicare, Workers Compensation, etc.) while other potential sources provide a much smaller portion of the total.

Agencies were asked to rank order the various sources used in terms of the order in which they seek funding from these sources. Although VR is the largest funder of devices, 22% of respondents said they seek VR funds second, while another 43% rank VR in third place for seeking funding. Only 14% approached VR first for funding devices.

The second most frequent funder of assistive technology aids and devices, Similar Benefits Resources, are sought first by an overwhelming majority of agencies (82%). When not approached first, Similar Benefits Resources are requested second by 12% of agencies and third by the remaining 6% of reporting agencies.

Employers are considered by many VR agencies as appropriate sources of funds for devices, particularly since VR's mission is to find suitable employment for people with disabilities. Employers are sought first by 12%, second by 53%, and third by 27% of agencies in this sample. Given the low percentage of devices that were reported as funded by employers, it is clear that VR is unsuccessful with employers more often than it is successful when seeking funding of devices. More detailed research with employers should be conducted to see where more cooperation might be effected.

Finally, Philanthropic Sources and Disability Advocacy Organizations are rarely sought in the first three attempts. It appears from the data that these are last resort funding sources with Philanthropic Sources sought in many cases before Disability/Advocacy groups. It would be interesting to examine the level of knowledge about the benefits of assistive technology aids and devices on the part of employers, philanthropic organizations and disability advocacy groups. An information campaign may enlighten these groups and pave the way for better funding opportunities for VR clients.

Innovative Funding Programs

In one section of the survey, agencies were asked to describe unique or innovative programs available in the state which fund assistive technology aids and devices. A variety of programs were reported. Most agencies described programs through which people can obtain low interest loans. One agency mentioned an endowment fund which assisted people in funding technology. Another agency reported having a statewide "Rehabilitation Technology Super Fund" through which VR clients can obtain funding for assistive technology. One agency described a civic club technology sponsorship program. This program uses a special video designed by the Children's Rehabilitation Program as a marketing tool. Other programs mentioned utilizing Medicaid waivers, recycling efforts, and private insurance.

One unique program reported by an agency provided money directly to people with disabilities. To become eligible, a person must have a disability and apply

through the county. State funds provide up to $15,000 per year per person. This money could be used for any purpose which will assist them in maintaining their independence. Money can be used for anything from rehabilitation technology to fixing a roof. A great deal of money is used for technology in the home.

Rehabilitation Technology Specialists' Budgets

Since rehabilitation technology specialists are the primary providers of technology services and are in the position to make recommendations for the purchase of devices, a few questions were asked about funding from their perspective. For example, we asked whether rehabilitation technology specialists had their own budget for assistive technology aids and devices.

Only 13 (22%) of the agencies in this sample reported having a budget available to rehabilitation technology specialists in order to supplement or fund the purchase of assistive technology aids and devices. Of those with budgets, many have restrictions in their use. Some restrictions related to what could be purchased. One agency reported that only computer equipment could be purchased. Another reported that this money was only to be used for materials and supplies. Everything else should come out of the counselors' budgets. Other restrictions focused on who is eligible for receiving the items purchased. Most reported that the money could be used for any VR client. Some were restricted to clients who met economic criteria, and others said clients had to have an IWRP completed. One agency reported that this money typically becomes available unexpectedly and must be obligated hastily. No other restrictions were described.

Since costs are often mentioned as a major limit to the use of assistive technology, respondents were asked to rate (on a five point scale) the degree to which costs influence the rehabilitation technology specialists in making recommendations for the purchase of assistive technology aids and devices. On the average, costs seemed to occasionally (35%) or seldom (32%) influence decisions. There were, however, some (9%) who said costs never influence and some who said they frequently (19%) or almost always (5%) influence the technology specialist. Therefore, costs appear to be a factor for most, but not all, who make assistive technology recommendations.

Used Equipment

There are a number of ways in which funding of devices can be approached beyond direct purchase of devices. One method gaining in popularity is to direct clients to a used equipment referral system. These used equipment referral systems offer people a place to advertise used assistive technology equipment that they would like to buy or sell. How often are these systems utilized by VR agencies? Respondents indicated that 28 (47%) had a used equipment referral

system available to clients to purchase and sell devices. Of these systems, only two (7%) were directly operated by the VR agency. The majority (57%) were operated by Tech Act Projects with another six (21%) operated by other agencies. As discussed in the section on demonstration projects, these data do not tell us whether or not clients are encouraged to or if they do use these used equipment referral programs and if they are efficient or effective ways of funding assistive technology for VR clients.

Whether or not the above referral systems are used, we do have some information on the practice of the VR agencies in our sample of buying used assistive technology equipment. Table 2 reflects the purposes for which agencies report buying used assistive technology aids and devices. Only 19 (32%) agencies reported buying used equipment. The percentages in the table reflect the percentage of this 19. Agencies could check as many categories as applied to them.

TABLE 2

Does your agency ever purchase used assistive technology aids and devices for...

Purpose	*Number (%) Reporting*
For client use	17 (90%)
For a loan program	3 (17%)
For use in VR training, assessment or adjustment program	11 (58%)
For use in evaluating clients	7 (37%)

Loan Programs

Another method of procuring devices in a way that reduces costs is to use an Assistive Device Loan Program. Loan programs are being implemented in many states as part of the Tech Act Projects. The majority of agencies (67%) reported having an assistive technology aids and devices loan program available to clients. These programs are equally often operated by the VR agency and by other agencies (22 each). Two must be dually operated.

Device loan programs appear to be utilized for a number of reasons but most often to allow clients to try out assistive technology aids and devices in anticipation of purchase (88%) and to meet client's temporary needs created by training,

employment of other situations (85%). Again, obviously, most programs are used for several purposes.

Consumer Issues in the Use of Assistive Technology Aids and Devices

An issue of much recent discussion is the role of consumers in the process of considering assistive technology aids and devices. A goal for all who serve individuals with disabilities is to find ways to more directly involve clients in the selection and procurement of devices. Only 17 (28%) of all reporting agencies have a written policy for client involvement in the selection and procurement of assistive technology aids and devices.

Limits to Client Involvement

Respondents were asked to identify, from a list, barriers to client involvement that they see operating within their agencies. Table 3 lists these limits to client involvement.

TABLE 3

What limits client involvement with procurement of assistive technology aids and devices?

Limits to Client Inclusion Reporting	***Number (%)***
Knowledge, expertise of clients	37 (62%)
Bidding process	33 (55%)
Time constraints	12 (20%)
Severity of client disability	10 (17%)

Ten respondents (20%) reported experiencing no barriers to client involvement. Of those who did report limits, two barriers stand out. Client knowledge of assistive technology aids and devices and aspects of the bidding process appear to hamper the process for more than half of the sample. This clearly points out the need for better client orientation and education early in the VR process. Two studies in this grant are addressing the issue of client education. The bidding process needs to be more closely examined to see if there is a way to modify bidding so that it does not limit client involvement in the rehabilitation technology process.

Device Demonstration Programs

One way to improve client (and staff) knowledge of assistive technology is through the use of device demonstration programs available for clients and staff to view equipment and see it demonstrated. When asked, 49 (82%) of the VR agencies in this sample reported having a demonstration program available for clients and staff. Of these 49 programs, 22 (45%) are operated by the VR agency; 24 (49%) are operated by a "Tech Act Project" (PL 100-407); and 15 (31%) are operated by another agency. Obviously, some programs must be operated by more than one agency. The fact that 82% of VR agencies in the sample reported that demonstration programs were available indicates it probably is not important who operates these programs. What we do not yet know is how often programs are used by VR staff and clients, since availability does not guarantee use. Furthermore, we do not know if the location of (or who operates) the program makes them any easier or harder for VR clients and staff to access and use. These questions need to be more closely addressed in future research.

Abandonment of Assistive Technology Aids and Devices

An important issue when examining the use of assistive technology aids and devices is that of abandonment. Recent studies have indicated a high rate of abandonment within the first year of purchase. These studies were not done strictly with clients of VR but with the larger population of individuals with disabilities. We were curious as to whether VR clients experienced the same rates.

To examine this issue, we first needed to find out how long devices are tracked after clients receive them. Almost half (42%) of the sample said they track devices that they purchase for clients. Table 4 details the number of agencies that reported tracking assistive technology devices at various intervals after the client receives the device.

TABLE 4

Does your agency track the abandonment of assistive technology aids and devices purchased by the agency for your clients?

Interval	*Number (%) Reporting*
Set intervals prior to closure only	4 (16%)
Up to 6 months after closure	1 (4%)
Up to one year after closure	1 (4%)
Other intervals	19 (76%)

The literature suggested that most organizations that track abandonment do so at the intervals we included in the survey. It is clear that most VR agencies that track assistive technology devices do so at other intervals. Several agencies listed other time periods such as 60 days, annually, two years, three years, and five years. Other agencies said they had no formal procedure, they depended on the client to report use, they follow-up when something is wrong, or as counselor time allowed. One agency said that follow-up depended on initial cost of the device or accommodation.

Device Ownership

A related question to tracking abandonment is whether or not clients own devices purchased for them by VR agencies. Perhaps abandonment is not tracked by so many agencies because devices are owned by clients after purchase. To investigate this question, we asked agencies at what point do their clients own devices procured for them by VR? Table 5 contains the answers to this question.

TABLE 5

When the agency purchases an assistive technology aid or device for a client, assistive technology what point does the client own the item?

Point of Device Ownership	*Number (%) Reporting*
Immediately after purchase	14 (23%)
Upon 26 closure	12 (20%)
Set time period	18 (30%)

There were no agencies who checked that clients never own their devices. In other words, devices purchased by all VR agencies in this sample are eventually owned by the clients who received them. Ownership appears to take place at various points after purchase. For those agencies who checked Set Time Period, some of these included 60 days, one year, three years, two to five years, five years, and ten years post closure. Several reported that the client owned the item after it fully depreciated. Some agencies reported treating cases individually.

To deal with abandonment after the fact, many organizations have implemented a program in which consumers can return devices they have never used or no longer use. We asked VR agencies if they implemented any similar programs. More than half (67%) of the VR agencies in this study reported that they have established a system for clients to return assistive technology aids and devices no longer used. Table 6 contains a listing of what VR agencies reported that they do with returned assistive technology equipment.

TABLE 6

What does your agency do with this equipment?

Use of Returned Assistive Technology Equipment	*Number (%) Reporting*
Give it to other clients	36 (67%)
Put it in a loan program	17 (32%)
Sell it as surplus property	12 (22%)
Utilize it in vocational evaluation	6 (11%)

VR systems appear to use returned equipment efficiently by giving it to other clients, thus possibly reducing assistive technology procurement costs. Using it in loan or demonstration programs, particularly for clients to try out before purchasing devices, could work to reduce future abandonment. Clearly, abandonment of equipment is a problem. Many VR agencies appear to be dealing with the issue by tracking devices, utilizing loan and demonstration programs, and recovering unused devices.

Innovative Programs

Agencies were asked to describe unique or innovative programs related to device abandonment/recycling. Several agencies described programs where equipment is recovered from clients who no longer need it for employment and given to other clients. One agency distributes a list of recovered equipment so that there is statewide knowledge of what is available. Several agencies commented about programs rather than describing their program. One questioned the cost effectiveness of providing used equipment to clients since it requires significantly more fitting time than new equipment. Another agency said they encountered purchasing and liability issues in providing used equipment to clients and were wondering how other agencies got around these issues.

A few agencies mentioned linking with other agencies to provide equipment. "Tech Act" programs and Centers for Independent Living were mentioned as partners in loan and exchange programs. One agency signed an agreement with the National Christina Foundation to facilitate recycling computers.

Summary

The funding and procurement of assistive technology aids and devices are issues which all responding agencies have addressed. Agencies have taken a variety of both traditional and unique approaches in addressing these issues. Very few agencies have fully addressed two issues which are closely related to funding and procurement: consumer involvement and abandonment. One study to be conducted in Year 3 of the grant will address one aspect of consumer involvement to determine if there is an impact on abandonment of equipment, devices, and accommodations.

CRTS is a Rehabilitation Engineering Research Project. Funding for this report has been provided by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education grant #H133E20002-94. Opinions expressed in this report are those of CRTS and should not be construed to represent opinions or policies of NIDRR.

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Rehabilitation Technology Services in Vocational Rehabilitation Agencies Survey

GENERAL REPORT OF FINDINGS

Computer Use in VR Agencies

September, 1994

Center for Rehabilitation Technology Services
SC Vocational Rehabilitation Department
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Computer Use in VR Agencies

In order to work with and conduct studies in Vocational Rehabilitation (VR) agencies, we decided it would be helpful to know if the staff utilize computers and, if so, how they are used. A series of questions were, therefore, included in the survey addressing computer usage. The results are summarized in this section of the final report.

Individual Computers

This portion of the survey was primarily concerned with what and how information is shared internally and externally among VR service delivery personnel. For the purposes of the survey, service delivery personnel are defined as those VR staff members who work directly with clients (e.g., rehabilitation counselors, clerical support, vocational evaluators, etc.) Fifty-four VR agencies (89%) provide personal computers for service delivery personnel. Table 1 shows the type of staff who have computers and the ratio of computers to staff.

TABLE 1

What is the approximate computer to staff ratio for service delivery personnel?

Staff	*Number of Agencies*	*Computer to Staff Ratio*
Rehabilitation Counselors	42	6:10
Vocational Evaluators	18	8:10
Clerical Support	46	10:10

Clerical support staff and rehabilitation counselors have access to computers in most VR agencies. The clerical staff have greater access to computers since there is nearly one computer for each staff person (42 of the 46 agencies reported one- to-one ratio for clerical staff). It would appear from these data that not every counselor has a computer on his or her desk. However, 19 agencies did report that there was a one-to-one ratio of computers to counselors.

It is interesting to note that fewer agencies provide computer access to vocational evaluators but, when they are provided, it is at a higher ratio than for rehabilitation counselors. This may be due to the fact that VR agencies typically contract for vocational evaluations so there are fewer agencies with vocational evaluators on staff. In another section of the survey, a similar question was asked regarding vocational evaluators' use of computers. This section of the survey was typically completed by persons in the agency who had responsibilities in the vocational evaluation area.

Thirty-four agencies reported employing vocational evaluators and providing them access to computers. Once again the ratio of computers to vocational evaluators was 8:10. Table 2 shows the purposes for which these computers were used.

TABLE 2

What are the primary uses for the computer?

Use	*Frequency of Use*
Assessment/Testing	22 (65%)
Report Writing	27 (79%)
Job Search	25 (74%)
Case Management	12 (35%)

It is evident that vocational evaluators primarily use computers for writing reports, conducting tests, and exploring job opportunities. Comments in the other category were related to career exploration and interpreting and scoring test data. Some evaluators used it for teaching, college program searches, E-Mail, and program evaluation.

Table 3 shows the types of personal computers typically used in VR agencies. IBM compatible computers are, by far, the most commonly used.

TABLE 3

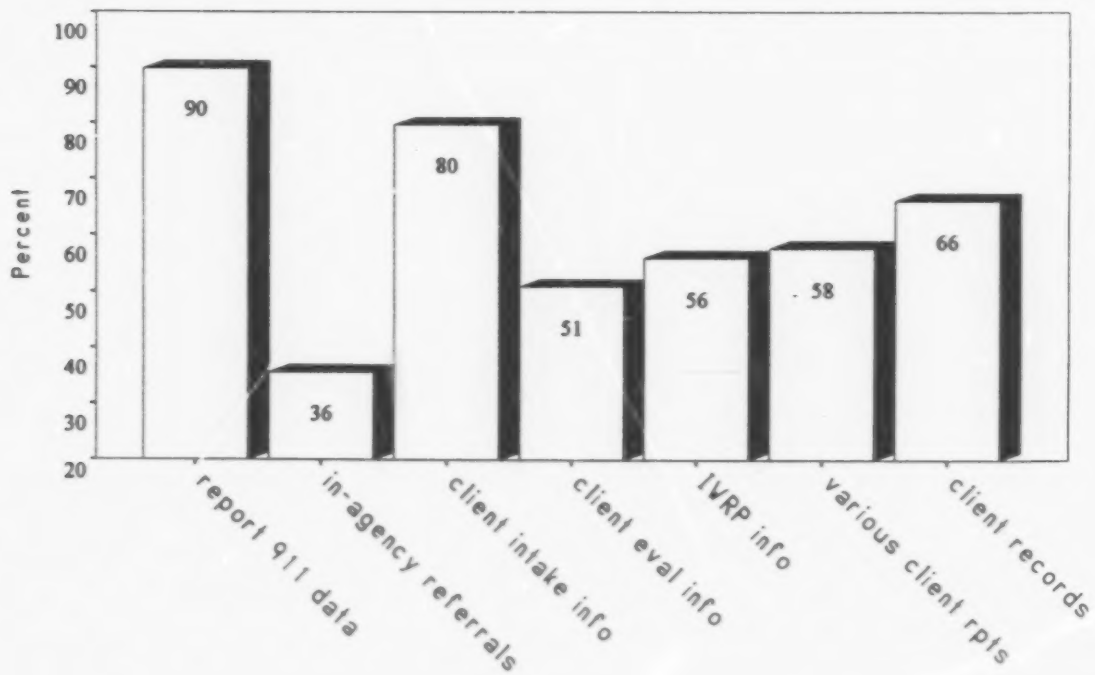
What type of personal computers are most commonly used by service delivery personnel?

Type of Computer	*Frequency of Use*
IBM Compatible	48 (83%)
Macintosh	2 (3%)
Apple II Family	1 (2%)

Applications

As seen in Figure 1, computers are most often utilized for reporting 911 data and least often used for in-agency referrals. Support staff typically enter the 911 data and professional staff most often utilize the computers for the other applications shown in Figure 1.

Figure 1 **If your agency has a computerized VR client information system, in what ways are computers utilized in the rehabilitation process?**



A variety of software types and applications are utilized by VR agencies. Table 4 shows word processing as the most common software application and Word Perfect as the most common software type.

TABLE 4

What software packages or agency-developed packages are used by service delivery personnel?

Software Application	% of Agency Response	Software Type Most Commonly Used
Word processing	89	Word Perfect (DOS)
Data base	51	DBase
Spread sheet	59	Lotus
Caseload management	23	Numerous types
Job matching system	30	Numerous types
E-mail (external/internal)	34	ENABLE/numerous internal types

Networks

Networking through the use of computers provides an efficient method of disseminating and sharing information. There are two general approaches to networking: internal and external. Internal networks use computers interconnected by dedicated communication channels to connect agency staff to each other (local area network [LAN]). External networks utilize computers with modems to connect agency staff with others outside the agency.

Internal Networks

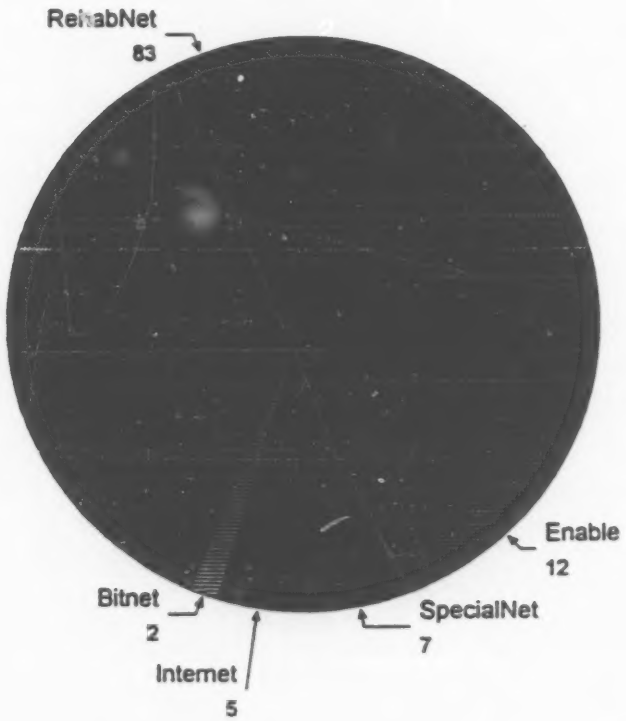
Agency-wide internal networks are utilized by 42 (70%) of the responding VR agencies. Of these agencies, 24 (57%) network through the use of mainframe computers, 22 (52%) use personal computers and nine (21%) use minicomputers. Sixty-four percent of the responding agencies have internal electronic mail (E-mail) capability for use among VR staff statewide.

External Networks

VR agencies subscribe to data bases, bulletin boards, or E-mail systems in order to communicate with or receive various types of information from outside sources. Sixty-one percent of the agencies subscribe to data bases and/or bulletin board systems. These systems can be grouped into several categories based on their focus or their sponsoring entity. The categories include: state/federal government sponsored systems, commercial products, employment opportunities, professional organizations, federal grants, service providers, durable medical equipment dealers, etc.

Seventy-eight percent of responding VR agencies subscribe to external E-mail systems. Figure 2 shows the types of E-Mail networks to which VR agencies subscribe.

Figure 2 If your agency is connected with an electronic mail system, what network do you use?



Frequency of use is indicated as a percentage.

As seen in Figure 2, most agencies subscribe to Rehab Net. This network is sponsored by the Council of State Administrators of Vocational Rehabilitation (CSAVR). Staff access to these external E-mail services range from all staff to only administrative staff.

Future Plans

Of the 56 responding VR agencies, 41 indicated they have future plans to update their computer system. These plans include:

- updating the mainframe system;
- providing personal computers to all field staff;
- providing laptop computers for out-of-field office use by field staff;
- statewide networking of field staff for client information input/retrieval and electronic mail purposes;
- networking with other state agencies offering employment opportunities;
- updating existing client information system;
- upgrading existing computers/software;
- expanding databases; and
- providing a system to network clients with technology service providers.

Summary

The use of computers in VR agencies has increased in the last few years and, according to the response to the future plans question, will continue to increase over the next few years. Internal and external networks are well established in many of the responding agencies and several agencies mentioned plans to increase networking capabilities. Most agencies indicated that they plan to upgrade computers and expand the capabilities of their system.

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